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Major Pick-Up in Automotive Machine Tool Buying Impends

Radical changes planned in new models combined with booming production presages continued expansion in car and parts maker purchases of factory equipment

by Athel F. Denham
Automotive Industries, Detroit Editor

MACHINE tool purchases by the automotive industry, which have taken a decided spurt during the past sixty days, at the present time show no signs of slackening. Two factors contribute to the upward move:

1. Inability of producers to reach the high production schedules desired with equipment available in their plants, and

2. Contemplated early introduction of new models, particularly in mid-season.

The change in attitude as regards capital outlays on the part of boards of directors of major automotive companies has been hailed with relief not only by production executives in those plants but also by engineering staffs who are thereby enabled to work on the development of new designs which involve even further re-tooling to bring them before the public. During the past few years automotive design has been seriously hampered by the ruling: Incorporate in new models only the minimum of design changes which require new tools.

That situation has now been reversed and a good indication of this change in attitude is the recent increase in size of engineering staffs by major automotive producers.

It is true also that the industry, with regard to tooling up for new models, doesn't wish to be caught in the same fix it was this year as the result of the tool and die strike which slowed up all preparatory processes including the purchase of new machine tools. This, however, is not the major factor in the increased tendency toward capital outlays.

Automobile producers are still cagey about even tentatively releasing designs to be incorporated in any new cars further away than mid-season. For instance it will be a matter of some time yet before it can be determined what effect the introduction on a real production scale of the new Chrysler and De-Soto cars will have on future trends. A major success on their part might easily lead important producers to jump one step further to the introduction of rear engined cars for 1935. Although such cars are not regarded as a mid-season probability, they are a possibility for next year's shows.

A development which is likely to appear on mid-season models, however, is the incorporation of independent springing on the rear as well as the front. Independent automobile producers are expected to lead in this development to compete with General Motors' and Chrysler's front suspension. Automatic transmissions are once more being seriously discussed as possibilities for introduction during the next twelve months.

Moreover, an important car producer not previously in the truck field has been working on the designs of a light commercial line, which may materialize during the next few months. Another important producer is seriously considering the addition of two cylinders to its engine for 1935, which would involve, of course, a major re-tooling of its engine plant.

It also is likely that a former automobile plant, which has been closed down for several years, will be reopened 'under new management' and completely tooled up for production of a low-medium priced automobile of unusual design.

Parts producers in some cases have been getting an increased share of business from automotive producers. Some of this is due to inability of car manufacturers to attain sufficient production volume. More of it is due to unwillingness to concentrate too much production in car plants with the difficulties involved in obtaining the necessary skilled labor, the expenditures required for new tools—which expenditures are thereby transferred to the parts producer—and the fact that many parts producers are still willing to shave profits to increase volume of business. The latter factor, however, is of much smaller importance under present conditions than it has been in the past few years.

Parts producers during the next twelve months also will be faced with major outlays for new equipment, particularly for new designs. In spite of the increased activity in engineering departments at the car plants, automobile producers are looking more than ever to parts producers for the developments of new designs and ideas which will add to the saleability of future models.

It is rather difficult to determine at the present time what the effect of increased production schedules alone is on the purchases of additional equipment by parts producers. That it has increased the tendency to purchase new equipment goes without saying, although what volume will be represented by such purchases depends on individual conditions. Several important producers, however, are in no position at present to inaugurate major increases in production without the purchase of new equipment.

The lack of adequate modern production equipment is one of the major factors responsible for the inability of parts producers to supply sufficient quantities of completed units to car factories for assembly into vehicles. And this development, perhaps more than anything else, is responsible for automobile factories lagging so far behind orders in actual fabrication.

It can be safely said also that none of the major producers expected this year's demand for new cars to reach the proportions it has attained at present. Having under-estimated the demand, they are short on production equipment.

At present there is a tendency on the part of car factories to lean the other way and expect an even larger volume of total sales for the year than is yet to be anticipated with complete justification. Having guessed too low twice in succession, however, car producers can hardly be blamed for becoming optimistically minded. And machine tool producers should be the last to object. For them the development presages a major pick-up in business from the automotive industry.

Are Group Bonus Plans Doomed?

Has the death knell of the group bonus system of factory compensation of workers been sounded by developments under the N. R. A.?

Answers to this question in the past few weeks had tended increasingly to be in the affirmative. Already one major producer of cars has dropped the plan in all its operations. And this week, labor, which has long been critical of some phases of automotive compensation plans, came out directly against the group bonus in its ultimatum to Hudson, Buick and the two Fisher Body plants in Flint.

It is not unlikely that the agitation in labor circles for the elimination of the group bonus system has come from the same group that are responsible for the same leaning in factory circles—the older employees in point of view of service.

During the past few years every factory has attempted so far as possible to maintain skeleton forces of workers at nearly all times. These have been highly trained and efficient workers. As production increased during the past 60 days, and new employees were taken on, it became necessary also to increase the number of shifts operating to two and even three a day.

In such cases the general procedure has been to split up the more experienced workers among the several shifts to "tone up" the entire production force on each shift. Such moves, however, have had unsatisfactory results so far. Introduction of inexperienced employees naturally has decreased the efficiency of operations on the progressive lines of automobile manufacturers and major parts producers. The more efficient workers who had been earning say 90 cents to a dollar an hour when all were working on one shift, found themselves down to their minimum wage guarantees of 60 to 65 cents per hour as the result of inefficiency at some sections of the production lines.

In one or two cases this has resulted in serious threats of strikes on the part of the more efficient workers, demanding that the factory make it possible for them to earn their former compensation. It is understood that adjustments have been made in such cases to satisfy such employees, at least temporarily, until the efficiency of the entire plant can be brought up to its former pay level.

Inefficiency of labor incidentally is one of the major complaints in the automotive industry today. Production executives variously estimate that plants are at present operating under labor-efficiencies no higher than 60 to 70 or possibly 80 per cent of their former levels.

Some executives seem inclined to ascribe this loss in effectiveness in a large measure to the psychological unrest of workers in the industry today. However, it certainly would seem that in the final analysis elimination of the highly successful group bonus systems of the past would tend to even further reduce labor efficiency. Certainly this would be true unless effective individual bonus systems of payments can be developed to take their place.

With automotive labor in its present high state of restlessness, employers are loath to make any radical changes in industrial relations. The necessity for such changes, however, has become ever more apparent during the last few weeks.—A. F. D.

JUST AMONG OURSELVES

Construction Industry Meets Trade-In Menace

CONSTRUCTION machinery dealers have gone the automobile dealers one better. Trade-ins are barred in the code for these distributors, which went into effect on Feb. 5. The code forbids:

"Accepting or offering to accept used machinery or attachments, used equipment or other property in trade on the purchase price of new machinery or attachments or allowing or granting credit, directly or indirectly, therefor; providing, however, that nothing contained herein shall be construed to prevent a member of the trade from purchasing used machinery or equipment or other property as a separate and independent transaction."

It is a bit difficult to see just how such a provision will change past conditions materially, provided prospective purchasers decline to buy new machinery until somebody has bought their old at a satisfactory price. The automobile dealer code seems much more likely to get practical results.

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Enforcement by Cancellation

TO reiterate that aking the standardized used car provision of the dealer code work is the most important, practical task of code administration is to be trite. Extended controversy over other phases of dealer code operation, however, makes reiteration pertinent.

Benefits to be derived from the dealer code become clearer every day. The whole operation still is on trial, nevertheless, an attempted assumption of unauthorized powers by local code authorities on various details of operation conceivably can result in upsetting the whole applecart.

Every action by a factory, moreover, needs to be well-considered before being taken. Factories in general were inclined to oppose many of the provisions of the dealer code in the early stages of its development. At that time too little factory cooperation with retail code authorities seemed likely.

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Dealer Administration Seems to Lack Power

WITH the dealer code in operation, factory attitudes have swung far in the opposite direction. Factory attempts to cooperate with local code authorities, however, should not overshoot the mark. Cancellation of dealers' contracts as a gesture at backing up trade practice complaints made by local code authorities is going a long ways.

So far as we can determine, the dealer administration has no authority to punish anybody; all it can do is refer the case to Washington for prosecution. It is up to the NRA to decide whether it will prosecute through the Federal Trade Commission or through the Department of Justice. Decisions of local code authorities do not constitute law. There is some doubt at the present time of the right of these dealer code authorities even to adjust trade practice complaints.

* * *

Factories Urge Dealer Cooperation With NRA

REPORTS which have come to us recently indicate that local code authorities have, in some instances, attempted to enforce rulings, the legality of which can finally be determined only by the courts. Some factories, quite properly, are pointing that fact out to their dealers. Urging full cooperation with NRA and operations strictly in accordance with the law, these factories are making clear the fact that the opinions of local code authorities are not inviolate.

In other instances, some factories have leaned over far in the other direction and are reported to have backed the opinion of local code authorities with cancellation of dealer contracts. Action of this kind is full of dynamite, it seems to us. Positive evidence of violation of some provision of the contract between the dealer and the factory would seem to be necessary to warrant such action.

Support of the constructive principles on which dealer code operation is based and sincere upholding of the legal necessities of that code is to be expected—and is being given—by every factory. Resistance to, rather than exceptional support of, extra-legal rulings of local code authorities, on the other hand, is likely to work to the best interests of the entire industry in the long run.—N. G. S.

Selective Shortening of Hours Certain D

Industry and trade express fears at General Code Conference that higher prices made necessary by increased labor costs will blight markets.

by Don Blanchard
Editor, Automotive Industries

THE President's challenge to business immediately to "reemploy more people at purchasing wages" at the opening session of the General Code Conference held in Washington, fell on ears that were sympathetic to his objectives, but unconvinced on the practicability and logic of his proposal.

Although the question of shorter hours and higher wages was perhaps the most important topic scheduled for discussion at the Conference, the President's speech made it clear that the administration's policy on this question had already been determined. The question confronting the code authorities consequently was not whether, but how much hours should be reduced and wages increased.

What NRA's final answer will be to this question, is not definitely known as this is written, but the indications are that it will order a flat percentage reduction in maximum hours with an equal percentage increase in minimum wages. Where such revisions will work hardship, it is anticipated that machinery will be set up to rule quickly on requests for exceptions in much the same manner as exceptions from the President's Reemployment Agreement were granted last year. How large a revision is contemplated, is uncertain, but some questions asked by General Johnson at one of the group sessions suggest that he has a 10 per cent reduction in hours and an equal increase in wage minimums in mind.

However, it was pointed out that if it was decided to make a general rule from which individual industries and trades could secure exemption to fit their needs, it was important to make the announcement in a manner that would not give the public the idea that all hours were to be cut immediately. In other words, the announcement should make it clear to everyone that the job was going to be done selectively.

To reach a solution of the many problems confronting business, General Johnson announced Wednesday that industry would be divided into consumer and producers' goods groups and that each group would be asked to name a standing committee. For the consumers' group, George Sloan of the Cotton Textile Code Authority was named chairman, while G. N. Houston of Baldwin Locomotive was appointed chairman of the producers' goods committee. The two groups of industries met on Thursday to name the committees to study their respective problems. Following their deliberations, a decision on the hours question will be reached and possibly on other problems before the conference.

At the group session devoted to employment, business was unanimous in registering its opposition to increasing labor costs at this time by shortening hours and raising wages. Primarily responsible for their opposition was the fear of the blighting effect the higher prices which higher labor costs would entail, might have on markets. There was plenty of opinion expressed that the net effect of higher prices at this time might be less employment rather than more, due to reductions in consumer buying. This possibility also was emphasized by Dr. Paul Nystrom, well-known marketing expert, who pointed out at another session that something like a buyer's strike could be expected this spring. He said the general index of prices is up 30 per cent now and that the increases are most noticeable in articles of common use.

This point was stressed in the statement made by the National Automobile Chamber of Commerce for the Automobile Manufacturing Industry. This statement, which was presented by William J. Cronin, secretary of the Chamber's Manufacturers' Committee, was one of the strongest offered at the employment sessions.

After emphasizing the seasonal nature of the industry's business and its sensitivity to general economic conditions, the statement showed:

1. That the shift in demand to low-priced cars had reduced the industry's total labor demand by 12 per cent.
2. That despite this shift, the man-hours per car produced has not decreased.
3. That because of spreading the work, employment did not fall as rapidly as production, and hence the 1933 increase in employment was not as great as the gain in production.
4. That the average hourly earned rate declined only from 71.8 in 1929 to 60.3 cents in 1932, and that it increased to 65 cents in 1933, and to 71.8 per cent in March, 1934.
5. That due to the complicated nature of the industry's manufacturing processes, perfect balance can not be attained and hence only a portion of the industry's employees will average the code maximum of 40 hrs., the average for all employees probably being about 35 hrs.
6. That average weekly earnings declined only from $32.74 to $18.60 in 1932 and $20.01 in 1933, despite work-sharing, and that they were back up to $29.82 in March of this year.

Mr. Cronin then showed the effects of all these forces on costs and prices by taking a model produced by a volume manufacturer. He said that the list price of this car is now 9 per cent lower than in 1926 despite important improvements. This decrease has been effected in the face of an 18 per cent increase in labor costs since 1926, offset by an 8 per cent decrease in material and freight costs. The total manufactured cost is equal to the 1926 level, but a greatly improved car is being sold for 9 per cent less. Obviously, profit margins have been reduced to the point where any further increases in cost must necessarily be passed to the consumer.

"The paramount need of the industry," Mr. Cronin concluded, "is increased volume if it is to increase employment to a substantial extent. While shortening hours might add a limited number of employees temporarily, the offsetting factor of increased prices would in all probability decrease volume to such an extent that there would be ultimately a net reduction in employment. It is impossible to over-emphasize the grave consequence that an increase in price may bring to both workers and manufacturers as a result of reduced volume and consequent unemployment. . . . If given reasonable opportunity to carry on without being forced to increase

Despite Strong Opposition of Business

prices, with necessary flexibility in operations permitted by the Code, and barring interruptions in production resulting from labor agitation, there is a good basis for the hope that expanded operations may result in the re-employment of thousands of additional men and at no less than the high level of wages now prevailing."

It was evident throughout the employment sessions that there is a great mass of opinion among business men that the problem is to stimulate production and distribution and that it cannot be solved by increasing labor costs to expand purchasing power. R. E. Flanders of the Jones & Lamson Machine Co. and of the NRA Industrial Advisory Board said that, while something might be said for shorter hours as a means of spreading work during a depression, as a measure of recovery it is not merely ineffective—it is destructive. He pointed out that it was impossible to attain a satisfactorily high standard of living in 1929 when working hours were 48 to 56, and that it was doubtful if the desired standard now could be attained on 40 hours per week. He suggested that perhaps we had been too hasty in discarding the CWA. The prolonged applause which greeted these views indicated widespread agreement with his position.

Although William Green, president of the American Federation of Labor, said he would reduce hours progressively until all unemployment was absorbed, presumably with proportionate increases in pay to maintain weekly earnings, the difficulties of so doing were effectively presented by Dr. A. J. Hettinger of the NRA Research and Planning Division. He said that it would take a 30 per cent reduction in hours to absorb unemployment in manufacturing industries and that wage rates would have to be lifted 40 to 50 per cent to maintain weekly earnings. He analyzed unemployment as follows, drawing the conclusion that the heart of the unemployment problems is in the capital goods industries, particularly construction:

	Number of Unemployed
Consumption goods industries	880,000
Service industries	4,770,000
Durable goods industries	6,040,000

He also presented a table showing what hours would be necessary in the 78 industries covered by the Bureau of Labor Statistics. The table follows:

Number of Industries	Maximum Hours to Absorb Unemployment
29	30
19	25-29
11	20-24
12	15-19
4	10-14
2	8
1	6

Dr. Hettinger said further, that there was a tendency to over-simplify and to assume a mobility and interchangeability of labor that does not exist. He was supported in this by numerous speakers who said they were faced with serious shortages of skilled and semi-skilled labor. Col. George Brady, NRA deputy administrator, said that code maximums were too low for the production peaks for skilled labor, and too high to absorb unskilled labor. He proposed an admendment to codes covering machine shop and metal working industries providing for an eight-hour day and a 36-hr. week for all employees receiving less than $35. During peak emergencies, skilled workers would be permitted 12 hours daily and 60 hours weekly, with time and a half for hours in excess of 48.

Exemptions provided for different classes of workers came in for considerable discussion. The desirability of eliminating maximum hour provisions also was offered for consideration by some spokesmen. Instead they would have the code establish normal working weeks with specified overtime compensation for excess hours. This probably would simplify administration and certainly would make for flexibility.

A great deal of dissatisfaction with the enforcement of code wage and hour provisions was expressed at the employment sessions. Many speakers urged that if NRA would enforce compliance with present code requirements, an important increase in employment and payrolls would result. They felt that existing stipulations should be enforced before any revisions were made. More severe limitations, of course, will increase the tendency to evade the code requirements and it was urged that before complicating the enforcement problem by making the codes more severe, a real effort should be made to secure compliance with existing requirements.

What labor has gained under NRA was summarized objectively by Dr. Leo Wolman, chairman of the NRA Labor Advisory Board. He said "It is a fair estimate that the normal work week in American manufacturing industry has been reduced within the last nine months by at least 10 hours per week, and there is reasonable probability that the average reduction is as great as 15 hours. There is no precedent for such a change in any record of which I am aware." He also presented data showing that hourly wages in 21 representative industries were 55 cents in Dec., 1933, as compared with 59 cents in 1929. In general, he said "The average hourly earnings of all manufacturing industries probably stood at 60 cents an hour at the peak of things in 1929. Under the force of the depression they may have descended to as low a point as 40 cents an hour . . . Since the application of the Recovery Act they have made up a large part of their loss and are now close to 55 cents an hour." He also said

Summary of Automotive Facts Presented by the N. A. C. C.

	1929	1930	1931	1932	1933	March, 1934 Estimated
Average monthly number of factory employees	198,000	132,000	121,000	97,000	110,000	183,000
Man-hours per composite car produced — factory hourly employees	140	140	134	165	141	....
Average hourly earned rate—cents	71.8	71.6	68.4	60.3	65	71.8
Average hours per week	45.6	38.1	34.9	30.8	32.7	....
Average weekly earnings —dollars	32.74	27.28	23.87	18.60	20.01	29.82

that the ruling factor governing employment and payrolls "is the general volume of business activity." This statement checks with the viewpoint expressed by so many business men at the employment sessions who contended that volume of production was the important element and that its continued expansion should not be jeopardized by the higher prices that increased labor costs would make inevitable.

About the only supporters of shorter hours at the employment sessions were the spokesmen for labor. The points they made were all covered in the points made by Labor Federation President Green. He emphasized the following "needs": Increased employment. Increased purchasing power. Improvement in certain detailed provisions of the codes—among others the provisions dealing with exceptions, with differentials and with wages in the higher brackets. A more equitable competitive situation among industries and among the plants of a given industry. The development of collective bargaining. Better compliance, particularly with Section 7a.

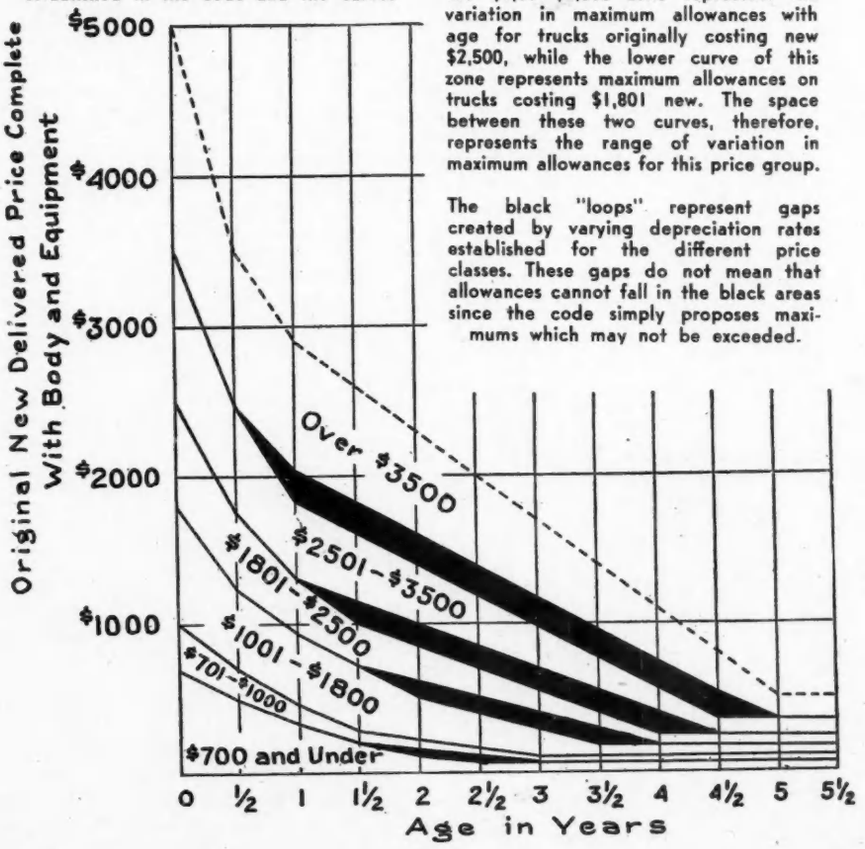
An Analysis of Maximum Allowances Proposed in Truck Code

Example: What would be the maximum allowance on a used truck purchased in January, 1931, at a delivered price including body and equipment of $1,500?

Referring to the table in right hand column, the truck is in the $1,000-$1,800 group and, since it is three years and two months old, the maximum allowance would be 20 per cent of its original purchase price, or $300.

Chart giving a quick picture of the ranges of maximum allowances which would be permitted under the proposed truck code. The price classes shown are established in the code and the curves are obtained by applying the percentages in the accompanying table to the top and bottom price in each price class. For example, the upper curve of the $1,801-$2,500 zone represents the variation in maximum allowances with age for trucks originally costing new $2,500, while the lower curve of this zone represents maximum allowances on trucks costing $1,801 new. The space between these two curves, therefore, represents the range of variation in maximum allowances for this price group.

The black "loops" represent gaps created by varying depreciation rates established for the different price classes. These gaps do not mean that allowances cannot fall in the black areas since the code simply proposes maximums which may not be exceeded.



The percentages apply to the new delivered price of the truck including body and equipment

The heavy rules dividing the table into sections are inserted simply to facilitate comparison of the ages at which trucks in the different price groups have the same maximum allowance percentages of the new price.

Years	Months	Under $700	$701 to $1000	$1000 to $1800	$1800 to $2500	$2550 to $3500	Over $3500
	1	95	95	95	95	95	95
	2	90	90	90	90	90	90
	3	85	85	85	85	85	85
	4	80	80	80	80	80	80
	5	75	75	75	75	75	75
	6	70	70	70	70	70	70
	7	66	66	67	67	67	68
	8	62	62	64	64	64	66
	9	58	58	61	61	61	64
	10	54	54	58	58	58	62
	11	50	50	55	55	55	60
1	12	46	46	52	52	52	58
	1	43	43	50	50	51	57
	2	40	40	48	48	50	56
	3	37	37	46	46	49	55
	4	34	34	44	44	48	54
	5	31	31	42	42	47	53
	6	28	28	40	40	46	52
	7	26	27	38	39	45	51
	8	24	26	36	38	44	50
	9	22	25	34	37	43	49
	10	20	24	32	36	42	48
	11	18	23	30	35	41	47
2	12	16	22	28	34	40	46
	1	15	21	27	33	39	45
	2	14	20	26	32	38	44
	3	13	19	25	31	37	43
	4	12	18	24	30	36	42
	5	11	17	23	29	35	41
	6	10	16	22	28	34	40
	7	10	15	21	27	33	39
	8	10	14	20	26	32	38
	9	10	13	19	25	31	37
	10	10	12	18	24	30	36
	11	10	11	17	23	29	35
3	12	10	10	16	22	28	34
	1	10	10	15	21	27	33
	2	10	10	14	20	26	32
	3	10	10	13	19	25	31
	4	10	10	12	18	24	30
	5	10	10	11	17	23	29
	6	10	10	10	16	22	28
	7	10	10	10	15	21	27
	8	10	10	10	14	20	26
	9	10	10	10	13	19	25
	10	10	10	10	12	18	24
	11	10	10	10	11	17	23
4	12	10	10	10	10	16	22
	1	10	10	10	10	15	21
	2	10	10	10	10	14	20
	3	10	10	10	10	13	19
	4	10	10	10	10	12	18
	5	10	10	10	10	11	17
	6	10	10	10	10	10	16
	7	10	10	10	10	10	15
	8	10	10	10	10	10	14
	9	10	10	10	10	10	13
	10	10	10	10	10	10	12
	11	10	10	10	10	10	11
5	12	10	10	10	10	10	10

Spicer's president, with a strike to settle, did the job with energy, tact, kindness and consideration and won the applause of his workers. Spicer men are seen in the photograph's background

He's "Charley" Dana To His Workers Now

by G. W. Hibbert
Staff Correspondent, Automotive Industries

TOLEDO'S strike of 4000 automotive workers in the plants of the Spicer Manufacturing Corp., Logan Gear Co., Bingham Stamping & Tool Co., and Electric Auto-Lite Co., which was rather promptly settled on Feb. 28, brought to the front as one of the most dynamic characters of the automotive industry, Charles A. Dana, president of Spicer.

For several weeks trouble had been brewing due in part to the delay in getting the interested parties in consideration of a contract which the United Automobile Workers Federal Union No. 18,384 had submitted to the plant managements.

The strike came on Friday, Feb. 23, at noon. It affected the Spicer plant most acutely, for more than 2200 of the workers there had walked out, some following the organized group in sympathy and others unable to work owing to the tie-up.

From the very start Mr. Dana, pictured in many of the workers' gatherings as the big bogey-man among the employers concerned, assumed the leadership in the battle. It was below-zero weather. He was at the plant early, he addressed groups of the strikers as they walked out, he chatted with pickets, he carried them buckets of coal to keep their fires going, he sent coffee to them.

Sunday he held many conferences with business leaders and bankers but at the conclusion of each it still appeared to be his job to do something to straighten out the situation.

He got business agents and representatives of the plants together at the Commodore Perry Hotel Sunday night with Philip C. Nash, president of the University of Toledo and chairman of the sub-regional labor board, as chairman of the meeting. The basis for agreement was laid down then and there.

That night Mr. Dana jumped on a train for Washington where on Monday he conferred with NRA leaders, American Federation of Labor officials and others to see what could be done to help the Toledo situation. What did happen he leaves to Washington to say. Within a few hours he was back on the job. Tuesday there were more conferences. Labor leaders suggested going over the contracts in detail. Their members had turned down a flat 5 per cent increase all around.

And when the negotiations appeared to be at a stalemate Mr. Dana insisted on another conference Wednesday.

He had promised not only the 5 per cent but a revamping of the classifications of jobs and other adjustments which really made it 12 per cent on the average in the Spicer plant.

Auto-Lite put the 5 per cent increase into effect. It was affected only a little by the strike. The other plants, although smaller, declared themselves unable financially to make any further increases.

At the Wednesday conference, which drifted right through the

noon hour, relatively the same terms originally proposed were offered, but the unions were granted complete recognition and the promise of an agreement before April 1. The settlement was in effect a truce to permit revamping of agreements in the light of expected Washington developments.

When laid before the mass meeting of workers that night in the old Coliseum—a revamped street car barn and the scene of many fights and wrestling matches—there was a feeling of intense expectancy. Mr. Dana sat in the balcony. Thomas Ramsey, business agent of the automotive union, shed his coat as he walked onto the rostrum to speak. He said "principle is better than money" and urged the workers to accept the tentative pact. Representatives of the older machinists' and drop forgers' unions also approved the truce. It went over practically unanimously by a standing vote.

By this time the workers were referring to Mr. Dana as "Charley" Dana. He was one of them. He had been on picket duty with them. There he was up in the balcony, smiling as usual. They called for him.

"Friends," he began, "I am very much pleased at the conclusion of this matter. I enjoy leading my organization. I felt it was a privilege to work to provide jobs for you. There is only one thing really worth while about an organization and that is its men and women. Stone and mortar, bricks and machinery can be duplicated but the workers cannot.

"Our desire is to pay you as much as possible and still sell our goods. Our rates are not high, I know. But as long as I am connected with the Spicer company you may be assured that my organization will always endeavor to give as much work as possible at the highest rate of pay possible.

"I missed Mr. Ramsey out at the plant this morning. I've been on picket duty, you know. You should have been out there with us this morning at 6 o'clock, Mr. Ramsey, it was cold.

"Now that it's all over I hope we'll all be happy and soon forget these last few days. There is no reason why employee and employer should not meet on common grounds. (Loud cheers broke out.) No one knows better than I the value of advice direct from the workman.

"I am thankful that this situation has given me the opportunity of meeting so many of you face to face. Any time any of you have a grievance I hope you will come into my office."

The crowd broke into a bedlam of cheers. Charles Dana had stolen the show. Somebody piped up "For he's a jolly good fellow" and the meeting ended with everybody cheering Dana. He had gone out to the meeting merely as a spectator and had come off the star of the show.

It was then about 10 p. m. He hustled out to send 200 night letters for materials and some of the workers went directly to the plant. The 11 p. m. shift checked in and the wheels started rolling. Some departments even worked Saturday and Sunday to make up the lost time.

Effects of Oxy-Acetylene Cutting on Adjacent Metal

WHAT effect does the oxy-acetylene cutting flame have on steel immediately adjacent to the cut, and is this an effect for consideration when deciding on the use of the cutting blowpipe. This is a question that has been asked by engineers and others, particularly those concerned with the fabrication of structural members or other parts subject to considerable stress.

It is of course understood that the oxy-acetylene cutting flame heats the steel immediately adjacent to the kerf well above the thermal critical range within or above which crystalline and physical changes take place in the metal. It is also fundamental that the effect of these changes varies with differences in composition.

The results of various investigations which have been made along this line have been summarized in a recent issue of *Oxy-Acetylene Tips*, and should be of interest to people who are working with heavy welded construction in connection with large dies, machine bases, Diesel structures, etc.

It is concluded that the oxy-acetylene cutting of low-carbon steel, when carried out according to known and accepted procedure, is entirely satisfactory for subsequent commercial usage. Most high-carbon and alloy steels can be flame cut when the preheating and slow cooling of the metal are carried out. Preheating also tends to reduce the quantities of gases and time required, making a considerable saving. This last holds for low-carbon and medium steels as well. Flame cut surfaces of high-carbon and alloy steels are smooth and when suitably preheated just before cutting are similar in quality to the unaffected material.

Parts that are to undergo high repeated or reversing stresses on an exposed cut surface can be satisfactorily cut provided a satisfactory set-up of apparatus is made to insure a smooth, regular cut (precision cut) with no indentations. If not, the exposed cut edge should be subsequently planed or machined, if possible in the same direction in which the stress will flow.

The foregoing type of information obtained by laboratory investigation has been confirmed by field experience indicating that flame cutting of steel is not only a convenient method, but also entirely satisfactory from the standpoint of quality in the product. Attention of users should be given to the requirements in regard to smoothness of cut. When no stress is to be applied to the material at the cut and appearance requirements will permit ordinary hand cutting is quite satisfactory. If the edges are to be welded, caulked, or subjected to severe stress smoothness should be aimed for. This is best obtained with a mechanically operated flame cutting machine, although reasonably smooth cuts can be made with the hand cutting blowpipe by providing suitable guides for steadying its movements.

American Passenger Car Engine Trends

(Based on Number of Models Offered)

H.P. per cu. in. of Displacement

1925	.233
1926	.236
1927	.256
1928	.276
1929	.306
1930	.331
1931	.344
1932	.353
1933	.376
1934	.388

Average R.P.M.'s

1927	2740
1928	2860
1929	3063
1930	3170
1931	3230
1932	3250
1933	3360
1934	3420

Average Brake Horse Power

1927	65.8
1928	70.9
1929	81.6
1930	87.6
1931	95.0
1932	101.0
1933	106.5
1934	112.5

Timing Drives

	Per Cent Chain	Per Cent Gear
1922	27.8	72.2
1923	35.1	64.9
1924	43.5	56.5
1925	47.0	53.0
1926	64.0	36.0
1927	75.7	24.3
1928	79.2	20.8
1929	84.8	15.2
1930	85.7	14.3
1931	83.1	16.9
1932	85.7	14.3
1933	80.0	20.0
1934	76.2	23.8

Average Bore—Stroke Ratio

1925	1.36
1930	1.38
1931	1.39
1932	1.35
1933	1.36
1934	1.36

Average Piston Speeds

	Feet per Min.
1927	2150
1928	2210
1929	2310
1930	2380
1931	2395
1932	2390
1933	2463
1934	2508

Average Compression Ratio

1924	4.36
1925	4.40
1926	4.47
1927	4.55
1928	4.86
1929	4.99
1930	5.15
1931	5.23
1932	5.29
1933	5.57
1934	5.72

Average B.M.E.P.

At Maximum H.P.

	Lbs. per sq. in.
1927	74.5
1928	76.2
1929	80.6
1930	82.7
1931	84.3
1932	86.2
1933	88.5
1934	90.1

Displacement per Cylinder

	Cu. in.
1927	39.5
1928	39.1
1929	38.9
1930	37.6
1931	36.8
1932	36.7
1933	36.0
1934	36.2

Valve Location

	Per Cent L-Head	Per Cent Valve-in-Head	Per Cent Horizontal	Per Cent Sleeve	Per Cent T-Head	Per Cent F-Head
1922	63.0	29.9	0.6	3.9	2.0	0.6
1923	61.9	29.6	...	4.6	2.6	1.3
1924	61.9	28.8	...	5.1	3.4	0.8
1925	70.2	20.5	...	5.6	2.8	0.9
1926	73.5	17.30	...	5.1	3.1	1.0
1927	76.70	14.20	...	5.1	3.0	1.0
1928	76.60	14.00	...	5.6	2.8	...
1929	78.00	14.00	...	6.00	1.00	1.00
1930	84.33	11.75	1.96	1.96	...	...
1931	79.50	17.94	1.28	1.28	...	...
1932	74.00	19.20	4.10	2.70	...	...
1933	70.00	25.71	2.86	1.43	...	...
1934	65.7	31.20	3.10	...	...	...

Bore, Stroke, Displacement

	Bore (Inches)	Stroke (Inches)	Piston Displ. (Cu. In.)
1922	3.46	4.92	260.5
1923	3.43	4.81	257.3
1924	3.43	4.81	258.1
1925	3.48	4.73	262.6
1926	3.37	4.72	260.59
1927	3.26	4.67	254.86
1928	3.27	4.58	257.73
1929	3.27	4.57	261.27
1930	3.26	4.51	264.59
1931	3.21	4.45	273.00
1932	3.26	4.41	283.93
1933	3.23	4.40	284.07
1934	3.24	4.40	289.18

Number of Cylinders

	Per Cent 4 Cyl.	Per Cent 6 Cyl.	Per Cent 8 Cyl.	Per Cent 12 Cyl.	Per Cent 16 Cyl.
1922	30.8	59.1	9.5	0.6	...
1923	22.1	66.9	10.4	0.6	...
1924	19.5	70.3	10.2	...	...
1925	14.8	67.8	17.4	...	...
1926	13.00	66.0	21.0	...	...
1927	6.00	65.0	29.0	...	...
1928	6.50	58.0	35.5	...	...
1929	4.00	55.00	41.00	...	...
1930	2.92	43.20	52.70	...	0.98
1931	3.85	30.80	61.50	1.28	2.57
1932	4.20	30.60	54.20	8.30	2.70
1933	5.70	30.00	51.50	10.00	2.80
1934	4.68	31.20	48.50	12.50	3.12

Average Number of Cylinders

1927	6.45
1928	6.59
1929	6.71
1930	7.04
1931	7.49
1932	7.78
1933	7.88
1934	7.97

Piston Material

	Per Cent Cast Iron	P.C. Aluminum With Struts	P.C. Aluminum No Struts	Total Aluminum
1923	79.1	...	...	20.9
1924	76.0	...	...	24.0
1925	73.3	...	...	26.7
1926	76.0	...	...	24.0
1927	66.7	...	...	33.3
1928	43.4	45.8	10.8	56.6
1929	25.8	48.4	25.8	74.2
1930	21.55	61.7	16.65	78.35
1931	20.50	53.8	25.70	79.50
1932	28.00	50.0	22.00	72.00
1933	25.80	45.60	28.60	74.20
1934	17.20	43.80	39.00	82.80

Alloy Cast Irons and Many

RECENT metallurgical developments have made available a rich variety of materials for hot and cold forging and press dies used in the automotive field. In addition to the well-known alloy tool steels and carbon steels that have been on the market for many years, there has been a marked increase in the usage of cast iron, special alloy irons, and composite construction in the case of heavy stamping dies such as are used in the body industry.

Which material to use? It is difficult if not hazardous to answer the question without some investigation. Selection depends upon a number of controlling factors, among which are: type of operation, type of machine, size of work, gage of metal, kind of material and volume of production. Since these variables are known to those concerned with press shop operation, the chief contribution of a study of this kind is to point out the availability of new types of materials so that none will be overlooked in the constant search for economy.

Fig. 1—Radiator Grille of 20-gage sheet produced with Meehanite die equipment

Consequently in this article we shall touch upon the newer developments in this branch of manufacture, contenting ourselves with but a small sample from the broad field outlined in Table 1.

Perhaps the outstanding feature is the general adoption of a wide range of special and proprietary alloy cast irons for large stamping dies; also the widespread use of heat-treated, nickel-chromium cast iron for auto body dies. Another recent development is the use of welded die construction introduced to body builders by Lukenweld. The object is to cut the cost of large dies by building a supporting structure of low-cost boiler plate to which are attached the working tool surfaces of cast iron or tool steel.

This is accomplished by a technique of flame-cutting the cheap, low-carbon boiler plate of any desired thickness, forming to shape, and welding by means of heavy-duty equipment to provide a strong, rigid structure for the die.

Applications of tool steels of various kinds are more or less familiar to readers of *Automotive Indus-*

TABLE 1 List of manufacturers of materials used in hot and cold die construction

Anchor Drawn Steel Co., Latrobe, Pa.
Bethlehem Steel Co., Bethlehem, Pa.
Burke Steel Co., 30 Sherer St., Rochester, N. Y.
Cannon-Stein Steel Corp., Syracuse, N. Y.
Carpenter Steel Co., Reading, Pa.
Colonial Steel Co., Pittsburgh, Pa.
Columbia Tool Steel Co., Chicago Heights, Ill.
Crucible Steel Co. of America, New York, N. Y.
Cyclops Steel Co., Caldwell St., Titusville, Pa.
Detroit Alloy Steel Co., 6403 Wight St., Detroit, Mich.
Disston & Sons, Henry, Tacony, Philadelphia, Pa.
Firth-Sterling Steel Co., McKeesport, Pa.
Halcomb Steel Co., Syracuse, N. Y.
Hammond & Irving, Inc., Auburn, N. Y.
Kidd Drawn Steel Co., Aliquippa, Pa.
Ludlum Steel Co., Watervliet, N. Y.
McInnes Steel Co., 441 E. Main St., Corry, Pa.
Midvale Co., Nicetown, Philadelphia, Pa.
Pittsburgh Tool Steel Wire Co., Monaca, Pa.
Republic Steel Corp., Youngstown, Ohio
Ryerson & Son, Joseph T., Chicago, Ill.
Universal Steel Co., Bridgeville, Pa.
Vanadium-Alloys Steel Co., Pittsburgh, Pa.
Wheelock, Lovejoy & Co., Cambridge, Mass.
Detroit Alloy Steel Co., Detroit, Mich.
Kinite Corp., Milwaukee, Wis.
Campbell, Wyant & Cannon Foundry Co., Muskegon, Mich.
Climax Molybdenum Co., New York City
Continental Roll & Steel Foundry Co. East Chicago, Ind.
Cyclops Steel Co., Titusville, Pa.
Erie Malleable Iron Co., Erie, Pa.
Gunite Foundries Corp., Rockford, Ill.
Haynes Stellite Co., New York City
Heppenstall Co., Pittsburgh, Pa.
Forgings & Castings Corp., Ferndale, Mich.
Wheelock-Lovejoy & Co., Cambridge, Mass.
International Nickel Co., 67 Wall St., N. Y. C.
Latrobe Tool Co., Latrobe, Pa.
Meehanite Institute, Detroit, Mich.
Midvale Co., Nicetown, Phila., Pa.
Timken Steel & Tube Co., Canton, Ohio

(Reference—Automotive Industrial Red Book)

Tool Steels Cut Die Costs

Recent metallurgical progress has made available a rich variety of hot and cold forging, and press die materials

by Joseph Geschelin
Engineering Editor, Automotive Industries

tries, representative of this practice being the recommendations of the Ludlum Steel Co., Table 2, and the Carpenter Steel Co., Table 3.

According to a recent report the Detroit area is the largest market for tool steel in the country and the bulk of this is said to go into die manufacture. Die blocks used in drop-hammer operations are mostly of open-hearth carbon or alloy steel. A small proportion, particularly smaller sizes with shallow impressions are of carbon tool steel (about 0.80-0.90), while die-block inserts are usually made of an alloy hot die steel. Hot forming tools are often of a tungsten type, while the trimmer dies may be of a chrome hot die, high-carbon chrome, or tungsten steel.

Under the great division of cold work are the operations of blanking, drawing and forming, which are handled by blanking punches and dies, various piercing and draw punches and forming dies.

Blanking punches and dies for use on ordinary runs where the cost of the steel has to be considered usually are of carbon tool and manganese oil-hardening steels. For long runs where the parts produced runs into the millions, high-speed steel and the high-carbon chrome types are popular. The latter in particular are used not only on light lamination work, but for thicknesses up to ¼ in.

Hardened punches for blanking are generally made from the same kind of steel as the die. For some work the punch is used untreated or drawn soft enough to peen to size cold, in which case it is nearly always made from straight carbon steel.

Dies for operations following blanking include drawing or reducing dies and stoving or cold forming dies. Here again straight carbon and manganese oil-hardening die steels predominate with high speed, high-carbon chrome and low tungsten types coming in for a share.

Another division of cold-work applications takes in coil pressing or embossing. This is really a process of sizing stampings, forgings, or castings between compression dies under heavy pressure, thereby eliminating costly machine operations. Dies for this work usually are of deep hardening steel possessing good wear resistant properties. Steels used on such jobs include straight carbon (0.85-0.95), carbon vanadium, 1 per cent carbon 1½ per cent chrome, and sometimes high-carbon, high-chrome types.

Through the courtesy of Oliver Smalley, president of the Meehanite Metal Corp., we give on the next page some of the pertinent data concerning the use of Meehanite, a sorbitic iron, in die construction. Table 4 is an analysis of the physical properties of five Meehanite specifications and the comparison with other commonly-used cast materials.

Processes "A" and "B" are said to be particularly suited for all kinds of forming, drawing and pressing operations because they are unusually tough and strong, possess a firm grain, resist wear to high degree, assume a high polish and eliminate galling and streaking of the metal formed. The material may be used for miscellaneous dies, such as: sheet metal (drawing, forming, pressing), spinning, cold trimming, hot form-

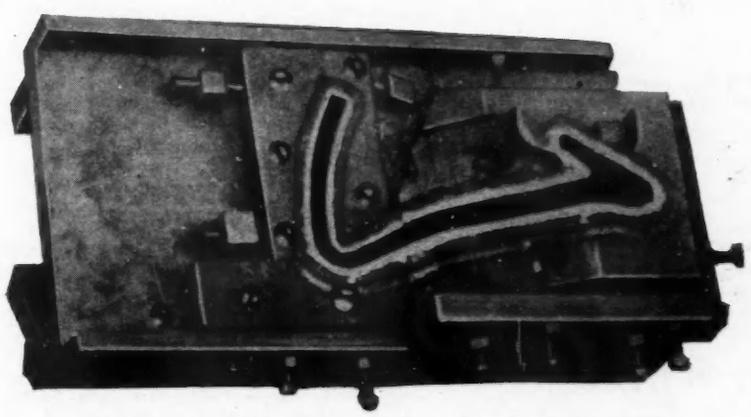


Fig. 2—Hot trimming die for brake pedals edged with Haynes Stellite produces 14 times as many pieces as original steel die

ing, forging and wire drawing.

According to Mr. Smalley, one of the largest automotive shops has used Meehanite for the past three years for drawing and forming dies on stock from 20 gage to 7/16 in. And the following shows some of the gages handled by a Detroit stamping plant, together with the number of stampings run off the dies.

Gage	No. Stampings
1/8"	30,000
3/16"	30,000
1/4"	30,000
5/16"	7,000
3/8"	7,000
7/16"	1,000

It is claimed that these dies are still in perfect condition, with a smooth, glass-like finish. The maker specializes in chassis frame members, channels, etc.

Fig. 1 shows a radiator grille produced with a process "A" Meehanite metal die using a cast-iron

TABLE 2

The following chart gives list of Ludlum Tool Steel grades with type analysis, application as die steel in automotive industry and remarks as to special characteristics.

Grades for Hot Work Applications

GRADE	TYPE ANALYSIS		APPLICATIONS	REMARKS
Mohawk Hot Die Grade 53	C W Cr V	.47 14.00 3.50 .60	Gripper or Hot Forming Dies with shallow impressions. Hot Cut Offs.	Suitable in general for applications where more hardness and resistance to wear is required and there is less shock.
Hohawk Hot Die Grade 50	C W Cr V	.38 11.00 3.50 .25	Gripper or Hot Forming Dies with deep impressions. Hot Header Punches. Forging Die Inserts.	Generally suitable for applications where less hardness is required and there is more shock.
Chrome Die Grade 31	C Cr	.95 3.50	Hot Trimmer Dies.	On trimmer dies for long runs—the air hardening high carbon chrome (Ontario) is used.

For dies on Maxipress work low carbon (C .45) 18:4:1 high speed and H.I.A. Grade 539 have been used successfully. The latter is a new grade—chrome nickel molybdenum type.

Grades for Cold Work Applications

GRADE	TYPE ANALYSIS		APPLICATIONS	REMARKS
Pompton. A medium to deep water hardening carbon tool steel.	C Mn (Furnished in any desired carbon range).	1.00 .25	Blanking Dies and Punches. Drawing and Forming Dies and Punches. Trimmer Dies. Coin Press Dies.	Used on short runs where distortion is not a factor and cost of steel is primary consideration. C .95-1.05 for general purposes. C 1.10-1.20 for deep drawing dies. C .85-.95 for punches on severe work.
Deward Manganese Oil Hardening Die Steel	C Mn Mo	.90 1.60 .30	Blanking Dies and Punches Forming Dies	Used on short runs where distortion must be low. High compressive strength.
Saratoga Oil Hardening Die Steel	C Mn Cr W	.90 1.10 .50 .50	Same as Deward	Has about the same physical properties as Deward. Wider hardening range, but more distortion.
Huron Oil Hardening Die Steel	C Cr V	2.10 12.50 1.05	Blanking Dies and Punches Cold Forming Dies	Used on long runs. Very highly resistant to abrasion. Low distortion. High compressive strength. More difficult to machine than manganese oil hardening.
Ontario Air Hardening Die Steel	C Cr Mo V	1.55 12.00 .80 .25	Trimmer Dies Same as Huron Also has been used for coin press and embossing dies	Used on long runs. Resists abrasion about same as Huron. Machines more readily than Huron, and has more toughness. Less distortion hardened in air than Huron.
L-XX 18:4:1 High Speed	C W Cr V	.68 18.00 4.00 1.00	Blanking Punches and Dies	Used on long runs. Some users prefer this type to high carbon chrome on account of machineability. Has about same compressive strength and impact values as Huron.

punch. No inserts were used. The material is 20-gage sheet and 30,000 stampings have been produced to date.

All grades of this material may be cast to form, the die "as cast" having a smooth surface which requires little or no machine work. Where exceptional service conditions are encountered heat-treatment is recommended. Any hardness may be obtained from 200 to 600 Brinell by a simple quench in water or oil, depending upon conditions.

Meehanite is not generally recommended for work requiring cornering, sharp beading, cold trimming and special ornamental effects Such dies are best handled with a good grade of tool steel if any length of service is desired.

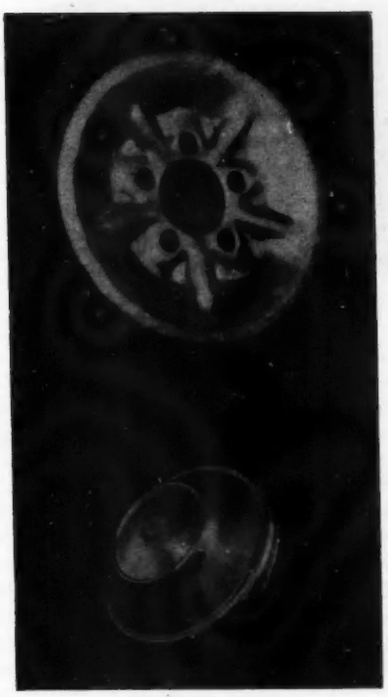
In many plants where hot forming and trimming operations are extensively employed, much interest has been attracted by the utility and economy of using carbon steel dies edged with Haynes Stellite. A few typical examples of such dies are: Running-board brackets, brake pedals, steering arms, ring gears, steering knuckles and gears, generator poles, axles and axle yokes, crankshafts, clutch yokes and camshafts.

According to a report from the Haynes Stellite Co., at one automotive plant a set of hard-faced trimmer dies for a crankshaft is said to have lasted more than 12 times longer than ordinary dies. In another plant hard-facing a hot trimming die for a ring-gear forging for trucks increased its output from 2000 pieces to 43,000 pieces per grind. A set of Haynes Stellited dies for hot trimming the flash from automobile hub forgings

TABLE 3

Carpenter Steel Grades for Dies and Tools

GRADE	TYPE	APPLICATIONS	REMARKS
Hampden	Oil hardening alloy tool steel.	Blanking dies, drawing dies, forming dies, dies for stainless steel.	For cold work where great wear resistance is desired.
Stentor	Oil hardening tool steel.	Blanking dies, subpress dies, trimming dies.	For cold work where the great productivity of Hampden is not required.
610 Air Hardening	High carbon-high chromium steel.	Blanking, drawing and forming dies.	For long production runs and great abrasion.
Star-Zenith	High-speed tool steel.	Cold forming and coining dies.	
No. 11 Special	Carbon tool steel.	Blanking and forming dies.	



Left—Wheel center and air-wheel hub cap stampings produced with Meehanite alloy iron dies

trimmed 10,000 forgings, as compared to an average of 2000 forgings with a regular steel die and punch. At another automotive plant Haynes Stellited dies for trimming red-hot wheel rims produce 3000 or more pieces per grind, or 10 times what was considered a good run when steel tools were used.

Besides the increased life of Haynes Stellited dies, a further saving, which in many instances is of considerable importance, lies in the fact that the metal for the die can be selected primarily for its ability to withstand shock and fatigue without regard to wear resistance. Thus in many cases it is possible to use plain carbon steels as the base metal.

Haynes Stellite welding rod, available in three grades, has the following physical properties:

Grade	Tensile Strength Lb. per sq. in.	Hardness (Welded Deposit) Brinell	Rockwell
No. 1	40,000	512	C54
No. 12	70,000	444	C48
No. 6	86,000	402	C43

For hard-facing with this rod the use of the oxyacetylene method is recommended wherever possible, because the blowpipe allows close control over the operation and produces a smooth deposit.

With so rich a variety of materials and processes available as is evident from the foregoing sample, the matter of selection is no longer simple. In the interest of economy and overall efficiency, forge and press shop executives must scan the field thoroughly before making the final decision on their die program.

TABLE 4

Physical Properties of Meehanite Metal Compared With Other Cast Materials

MATERIAL	SPECIFIC GRAVITY	TENSILE STRENGTH LBS. PER SQ. IN.	COMPRESSION STRENGTH LBS. PER SQ. IN.	MODULUS OF ELASTICITY	TRANSVERSE STRENGTH 1.25" BAR BETWEEN 12" CENTERS	DEFL. (INS.)
Meehanite (as cast) Process "A"	7.43	50,000 (70,000) (Heat Treat)	174,000	21,000,000	5,000 to 7,000	.13 to .20
Process "B"	7.37	42,000	160,000	19,000,000	5,300	.18
Process "C"	7.25	38,000	150,000	17,000,000	4,700	.17
Process "D"	7.13	35,000	135,000	15,000,000	4,200	.17
Process "E"	7.02	30,000	100,000	12,000,000	3,800	.18
Ordinary Cast Iron	6.80	20,000	80,000	7,000,000	2,500 3,000	.10 .15
Semi-Steel	7.20	34,000	110,000	12,000,000	3,000 3,500	.17 .15
Cast Steel	7.90	60,000	95,000	29,000,000	5,200	.20
Malleable Iron	7.41	50,000	90,000	25,000,000	3,500	.20

This Year's Shows Were

Only a third of the exhibitors applied known principles of showmanship, the authors say in this constructively critical article

by J. Parker Van Zandt and L. Rohe Walter*

IT may seem impertinent to raise the question of neglected opportunities for showmanship at the automobile show, when one of the most successful ever held at New York's Grand Central Palace recently closed its doors. "The automobile industry," reported *Time*, "is the prima donna of U. S. industry. Its annual show is always 'good theatre,' replete with all the tricks of the stage."

Certainly it is good showmanship to get prospective customers, by the hundreds of thousands, to pay good money for the privilege of viewing cars offered for sale. This initial phase of merchandising was well and thoroughly done.

But how about the quality of the competitive showmanship displayed by the individual exhibitors? How many of the 27 manufacturers, with their 250 new models, made effective use of the principles of showmanship demonstrated, for example, by the outstanding successes at Chicago's World Fair last summer?

Scarcely a third, surprisingly, made any gesture towards real showmanship. Noteworthy among these were De Soto, Studebaker, Plymouth, Pierce-Arrow, Hudson, Essex, Pontiac, Dodge, Chevrolet, Chrysler and Oldsmobile. Packard had the best organized auxiliary show. Mention should also be made of the "Human Ford" in the Rockefeller Concourse.

Unfortunately, the full benefit which this praiseworthy attempt at showmanship entitled the exhibitor to was in many cases stultified by a failure to gear the various functions of the exhibit together so as to present a smoothly coordinated, merchandising story with an effective sales follow-through. Moreover, many of the exhibitors relied on a dreary, conventional combination of long-winded sales talks beside the inevitable cut-away chassis and a static display of shiney, new models.

Now showmanship is the essence of good merchandising. True enough the Show Management imposes limitations, in the main, wisely, to assure a pleasing over-all ensemble, to cut down blatant noise, and to eliminate costly, competitive waste. The limitations and the density of the crowds need not, however, obscure the sales advantages which many manufacturers neglected, by failing to make use of sound principles of showmanship.

An exhibit-showmanship principle of proven merit is the clever interweaving of entertainment—long recognized as one of the strongest, most consistent cravings of human beings—with a convincing merchandising story. Good entertainment appeals to emotions common to us all.

De Soto collected packed crowds with a marionette show, depicting in entertaining scenes the story of transportation from the days of Hernando De Soto to the modern De Soto stream-lined car. The sequence of their merchandising effort was admirable. Having gathered their audience they followed through on the heels of the show with a convincing sales talk on the actual car, displayed on a platform high enough to be plainly visible to all; and concluded with an educational "reason-why" demonstration in a miniature, operating wind-tunnel, revealing the merits of stream-lining.

Pontiac, on the other hand, did not seem to make the most of an opportunity to capitalize on the throngs attracted by the clever one-act playlet: "Eleanor's Birthday"

* The authors have recently completed a five-month survey of the many types of exhibit appeals employed at the Chicago Century of Progress and their relative effectiveness. Mr. Van Zandt has been an official at the fair for two years, while Mr. Walter has specialized in advertising work in both New York and Chicago.

Best Ever BUT—

enacted in the Fisher Little Theatre. The mystery and entertainment of "A Real Playlet with Real People" on a stage 12 in. square never failed to draw a large audience. It had the beginnings of an effective sales effort; but at its conclusion the crowds tended to melt away because there was no inducement to draw them into the rest of the exhibit for a sales demonstration and follow-through to a selling conclusion.

This same failure to capitalize most effectively on a meritorious effort to introduce entertainment into their merchandising appeal, was evident in the exhibits of Hudson-Essex, Studebaker, and Pierce-Arrow. All three, nevertheless, deserve credit for recognizing a sound merchandising principle. The first presented little ten minute playlets, built around a deluxe model "Terraplane," introducing an air-mail pilot, an ingenue, a Scotch owner and a policeman with the loudest voice in the Show. Studebaker employed not only a marionette show, but in addition used the lure of getting something for nothing to attract their crowds. More than 15,000 people filed through their exhibit daily, drawn by the siren enchantment of their Golden Queen to "take a magic key and win a Studebaker—one given away free each day." Here again there was lamentable waste of a good selling opportunity, caused by the lack of a properly geared sequence and coordination between the various elements of the exhibit.

On the second floor, Pierce-Arrow's intrinsically good attention-getter was left hanging in mid-air, shorn of much of its merchandising effectiveness. Before the facade of a swank colonial country home stood the newest Pierce-Arrow creation. A beautiful setting for a beautiful car—unrelieved by any announcements, or demonstrator, to intimate what was in store for the throngs who passed by. Suddenly a handsome young couple in evening dress dashed from the house and took their places in the automobile. This looked promising and a crowd quickly gathered. But nothing happened. The actors said nothing. Perhaps it was the wrong car! After several minutes of pained silence, while the crowd grew restless and many moved on, the couple abruptly left the car and disappeared into the house. In less than a minute their twin confederates appeared, garbed now miraculously in golf clothes. Dummy-like, they sat out their turn in the car, disappeared again into the house and were replaced by their counterparts in evening attire. As an attention-getter, properly exploited, it had real possibilities but the opportunity to tell an effective sales story told where and when the people were, was not capitalized.

The principle of letting the public take part was introduced by Plymouth in their entertainment feature. They imported the acoustical demonstration "Oscar" used by the Bell Telephone System so successfully at the World's Fair and adapted it to drive home with telling effectiveness the merits of the new Plymouth. Here was a splendid demonstration of one of modern advertising's most successful sales methods—the addition of an idea not necessarily inherent in the product itself and the creation of an effective and entertaining sales story in which the product and the extraneous idea are inextricably interwoven. During each demonstration at the Plymouth exhibit, for several minutes, this principle of self-participation by the public assured to the Plymouth salesman-actor inside the booth the undivided attention of his audiences.

Concentration is essential to understanding and conviction. It is difficult enough, at best, to get a sales story across to the average citizen so that it will arouse his wants deeply enough to crystallize into buying action. Yet many exhibitors tried to force several sales stories on their audiences simultaneously—and succeeded in general in only confusing them. Trying to tell too many stories at once defeats its object, irritates the listeners and leaves no clear impression leading to active demand. Dodge, it seemed to us, erred in this manner.

There were 21 small animated displays mounted around the base of a turn-table on which a chassis and demonstrator stood, competing with the demonstrator for the attention of his audience. It was instructive to watch the crowds

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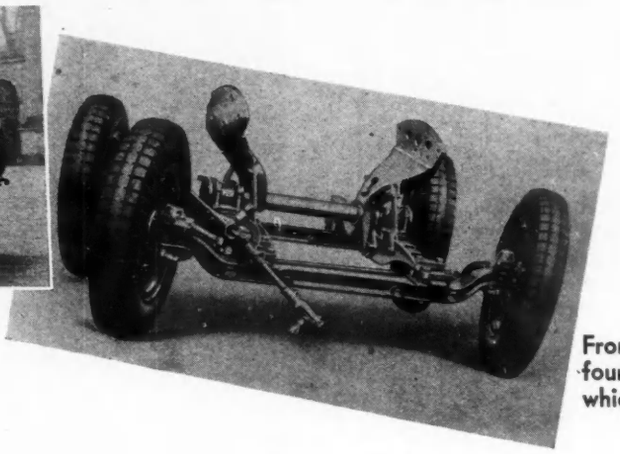
SCARCELY a third of the exhibitors at the recent New York Show made any gesture toward real showmanship, the authors say. And unfortunately, they consider, even some of this third failed to cash in on their efforts because the various functions of the exhibit were not geared together to present a smooth merchandising story.

Sentinel Markets Steam-Driven Eight-Wheeler Rated at 13 Tons

Sentinel eight-wheeled 13-ton steam truck



Front bogie, all four wheels of which are steerable

TWO new steam trucks for heavy haulage have been placed on the market recently by the Sentinel Waggon Works of Shrewsbury, England, one a rigid six-wheeler and the other an eight-wheeler. Under British conditions the rigid six-wheeler is said to be advantageous as compared with a tractor and semi-trailer combination. because the legal speed limit for the former (20 m.p.h.) is 25 per cent greater than that for the latter.

The most interest undoubtedly attaches to the eight-wheeler, not only on account of its unusual capacity (13 tons) but also because its design involves unusual problems with relation to steering. A photo of this truck is reproduced herewith. The front bogie, which carries the four steerable front wheels, consists of a pair of drop-forged steel axles each carrying a pair of wheels, both axles being connected to the ends of inverted half-elliptic springs which are pivoted at their centers on a cross member of the brackets secured to the chassis frame. In steering, the four wheels of the front bogie are swung around in the same direction, to somewhat different angles, of course. One of the two brakes fitted is a steam power brake, but from the information furnished us it seems that the truck is steered by hand in the usual way. This must make considerable demands on the driver, but in view of the speed limit of 20 m.p.h. it is likely that a very high reduction is used in the steering gear. The four-cylinder, horizontal, single-acting steam engine of the truck has a rating of 120 hp.

As in one of the horizontal engines for buses made in this country, the accessories (generator, engine lubricator, and air pump) are combined in a unit which is driven from the engine through a universally mounted shaft. Such mounting simplifies the drive problem and also makes these units more accessible than they could otherwise be.

Drawing by Perry Barlow
Reproduced with permission from The New Yorker

". . . and we've got wind resistance just about licked."

PRODUCTION LINES

Cracking Down

"Oil company in Texas loses out on company union," says current news item. The Labor Board ruled that the representation plan in this case doesn't give employees the full enjoyment of collective bargaining guaranteed by the NIRA. Knowing only what we read in the paper, we can't say anything about merits of the case. But there are two points that have been attacked by the NRA—and both should be met by an employee representation plan if the employer is to have a standing before the Board. First, the plan must have been submitted to the employees for acceptance. This should precede its installation and any balloting. Second, the plan should have some provision for arbitration—some machinery whereby *finis* may be written to any question raised by employees.

Production Costs

It is a real treat to be able to tell you of a new handbook for the production department, edited by L. P. Alford, who needs no further introduction. There are many kinds of handbooks available, many containing data on costs and cost accounting. But this is the first time that a reference volume is devoted exclusively to the needs of the manufacturing executive. "Cost and Production Handbook," edited by Alford and a board of 80 specialists, contains 28 different sections on the various activities of the manufacturing division. It runs 1600 pages, including some 700 tables and working forms. Published by Ronald Press at $7.50 the copy.

Knee-Wheels

Lancia has several technical ambassadors over on this side of the water acquainting engineers with the new Lancia independent spring suspension. It is of interest to note that the units on display at the New York Show represented a new construction quite different, in detail at least, from the design described in this country some time ago. Their feeling is that the new job represents considerable refinement and is well adapted to quantity production.

800,000 Radios

More than 800,000 auto radio sets were installed in 1933, we are told. So far as we can see this marks the nucleus of a drive which may ultimately result in placing radio as standard equipment on many cars in regular production. We hope in the interest of the radio manufacturers and makers of radio tubes who have labored to get the equipment to its present state of perfection that service experience will not mar the record thus established. What we mean is that many, if not the majority, of the cars on the road today don't have sufficient capacity to provide radio power if much night driving is done. If we are to have 800,000 radio boosters the original installation should have comprised an oversize replacement generator with voltage control, or at least a home battery charger. Anything less than this may result in a flare back, at least in the opinion of certain qualified observers.

Industrial Research

Forty-five companies have contributed to a study just published by the Policyholders Service Bureau, dealing with the control of industrial research aimed at cutting product cost and the development of new or improved products. "The Control of Industrial Research" deals primarily with the organization and administration of engineering and scientific research in its various phases. A limited number of copies are available to those who are interested. First come first served.

Friction Dope

Understand that a well-known engineering college has been commissioned to conduct a series of tire tests designed to produce data on coefficients of road friction under all manner of conditions. A new form of electrical recording dynamometer is to be used. Sounds to us as if these tests will parallel the recent work of Professor Moyer of Iowa State College.

Change Over

Understand this isn't official. But Ford commercial rear axles are going full-floating. It will probably take but few changes in the big axle plant at Timken to accommodate the new design.—J. G.

U. S. Intervention Averts Strikes at Fisher, Buick and Hudson Plants

National Labor Board Will Hold Hearing on Disputes on March 14—A. F. of L. Locals Demand Elimination of Alleged Discrimination and 20 Per Cent Pay Increase

DETROIT—Strikes by employees of Fisher Body and Buick plants in Flint and of the Hudson plant here beginning on Wednesday of this week, were narrowly averted, when, as the result of Federal intervention, the walkout was postponed, if not prevented. The National Labor Board, to which the disputes were referred by President Roosevelt, has called a hearing for March 14, and what action is taken at that time may determine the course of future events.

The ultimatum presented to the four plants called for an answer within 48 hours and demanded the following:

1—Recognition of the right of collective bargaining with representatives chosen by any group of employees—particularly those affiliated with the American Federation of of Labor.

2—Elimination of alleged discrimination against union members and organizers in those automotive plants.

3—Elimination of group bonus payment plans.

4—A 20 per cent increase in base rates, the 30-hr. week, or if the 40-hr. week provided by the code is maintained, time and a half for overtime over 8 hr. in one day and double time for Saturday and Sunday.

The possibility of a production line strike when the output of new models got under way was first forecast in *Automotive Industries* of Dec. 2, 1933. At the New York Show executives did not discount the strike possibility, but the general sentiment was that the prospect of avoiding serious labor trouble was much better than it had been a month earlier. In recent weeks, however, the situation has become steadily more acute due to agitation, including A. F. of L. in-

(*Turn to page 322, please*)

Labor Board Acts In Kenosha Strike

WASHINGTON — The National Labor Board has sent P. A. Donoghue as its representative to cooperate with the Chicago Regional Board in adjusting strikes in automobile works in Wisconsin. A strike began on March 2 in the Nash works at Kenosha, Wis., in addition to 11 other strikes in the automobile industry there.

Still Life With Animated (And How!) Background

Said Gen. N.R.A. Johnson at the hearing this week, "I hope that nothing the President has said or I have said will lead any one to the idea that industry is to be placed in a procrustean bed by ukase or fiat or to say that hours shall be so and so by administrative order." About non-compliers he said, "I have been too gentle."

NE

NRA Will Probe Company Unions

Davis Charges Motor and Steel Industry Plans Infringe Workers' Rights

WASHINGTON—Company unions, particularly in the automobile and steel industries, are to be thoroughly investigated by NRA, National Compliance Director Davis revealed at the Tuesday Code Administration session of the General Code Conference. He said he was authorized by the Administrator to say that:

"Investigation by the Compliance Division has disclosed the fact that a great many printed plans of employee representation in the automobile industry and in the steel industry has shown that these plans contain provisions which, in the opinion of the Administrator, are continuing violations of the spirit of Section 7a and continuing interference with the right of self-government of the employees.

"An example of such a provision which is commonly found in these plans is that there shall be no change in the self-organization of the workers without the approval of the plant managers.

"We regard that as continuing inteference with self-organization.

"It is a very wide spread thing and it is proposed to treat it by mass action; that is, to take the matter up through the code authorities with all the industries involved to bring the discussion, which is an important one, into the arena of NRA and to handle it, as we have handled all our discussions in the rather unique but now thoroughly well approved system or tribunal of NRA; that is, the administrative agencies, with the industry represented by its Code Authorities, and by individuals, and with the Advisory Boards present."

Subsequently, Mr. Davis said that the company union would not be recognized by the NRA under any condition, regardless of whether or not chosen by the employees, on the ground that a company union is not self-governed but is either controlled or influenced by the management.

WS

Ford Cuts Gap Between List and Delivered Prices

Freight Charges Reduced and Service Certificate Is Eliminated from Price

DETROIT—In addition to the adjustment in freight rates, reducing factory profits on freight to dealers, which enabled the Ford Motor Company to make part of the reduction in delivered prices announced in many sections of the country last week, a further reduction in "quoted" delivered prices was due to the elimination of the "service certificate" from the standard accessories group.

Formerly the quoted delivered price on new Ford cars included such a certificate, good for 12 inspections and lubrications over the period of a year, and valued at $5. This has been eliminated, but is still available to purchasers of new cars by the payment of an additional $5.

The reductions made last week do not apply in any general way to the entire country. In the Detroit area, except for the elimination of the service certificate, delivered prices are actually a few cents higher than previously due to some changes in the processing taxes, it is understood.

Included in the Ford delivered price, above list are the following universal charges:

Accessories, standard group	$31.50
Delivery charge	4.00
Radio advertising charge	2.00
Local advertising charge	4.00
Additional handling charge	3.00

These do not include charges for such items as gas, oil and alcohol, which are billed to customers by the dealer on a cost basis.

Carlton Hits Overlapping Codes

WASHINGTON — A definite decision on overlapping among codes was urged by C. C. Carlton, president of the Automotive Parts and Equipment Manufacturers, Inc., at the General Code Conference held here this week. Mr. Carlton said the problem is "not code compliance, it is code anxiety."

February Retail Sales Double Last Year's Total Despite Bad Weather

National Labor Board Hearing in Washington on March 14 Expected to Clarify Labor Situation—Estimate of March Production Holds at 340,000

by Athel F. Denham
Detroit Editor, Automotive Industries

DETROIT—In spite of bad weather prevailing during the latter part of February, particularly through the eastern part of the country, domestic retail deliveries of new passenger cars and trucks are estimated to have aggregated 153,000 units. This is almost double registrations for February last year, totaling slightly over 79,000 units.

Trucks made a better showing than passenger cars, total registrations of commercial vehicles being estimated at about 25,000, as compared with only 9700 in February, 1933.

With the labor situation cleared up at least temporarily with the decision to postpone strikes in Flint and at the Hudson plant, last week's estimated March production of roughly 340,000 still seems to hold good.

Automotive circles believe that the labor developments of the week may have a beneficial influence on the industry in the long run, since it is considered quite likely that the National Labor Board hearing in Washington on March 14 may result in consideration of the industry as a whole rather than as individual plants. Unless the situation develops in this manner, the Flint situation might be repeated in Detroit and other automotive industrial centers. Transfer of the entire labor situation to Washington is therefore considered as a good omen for the future.

Dodge retail deliveries during the week ending March 4 totaled 3886 vehicles, of which 866 were trucks. The second Dodge assembly line has been put into operation in Detroit for the first time since 1929.

Plymouth February production totaled 34,709, compared with 17,333 in January.

Hudson retail deliveries during February are estimated to approximate 10,000 cars.

Chevrolet built 72,273 cars and trucks in February, a gain of 78 per cent over January. February surpassed the production of any one month throughout 1932, and exceeded all but three months (June, July, August) of last year. Total Chevrolet production for the first two months of this year is several thousand units higher than for the same period last year.

Buick has announced a tentative schedule for March of 8800 units against February's output of 8507 cars.

Pontiac March production will be larger than during any single month since June, 1929, according to H. J. Klingler, president and general manager of the company. Despite a production of 10,840 in February, a gain of more than 25 per cent over last year, and a gain of 80 per cent over February, 1932, 24,873 unfilled orders are being carried into March. Production will be well over 18,000. Payrolls during February showed 5772 employees as compared with 2987 in February, 1933. Production through May is expected to total 78,300 units against 45,500 last year. Production was begun March 1 at Oakland, Calif., and Atlanta assembly plants.

N.A.C.C. Production Gains 68 Per Cent in February

NEW YORK—February production of cars and trucks by members of the N.A.C.C., is estimated by the Chamber to have totaled 170,206, a gain of 68 per cent over January and of 82 per cent over February, 1933.

Ford February production in the United States and Canada is believed to have approximated 63,000. A February total for the entire industry of about 233,000 is therefore indicated.

Chaminade Joins Chevrolet

DETROIT—Two important engineering appointments have been made during the past week by Chevrolet Motor Company. L. A. Chaminade, for the past 17 years with the Studebaker Corporation, both in Detroit and South Bend, as executive engineer, has been placed in charge of the Chevrolet Master pasesnger car chassis division.

J. W. Diederich, for the past three years with Chevrolet in charge of truck field investigation work, has been placed in charge of the truck chassis division. Mr. Diederich will continue to supervise field investigations alson.

The Summer Meeting of the Society of Automotive Engineers will be held June 17-22. As previously announced in these columns, it will be held at Saranac Lake, N. Y.

Code Conference Gets Two NRA Plans to Standardize Methods of Costing

WASHINGTON—Two methods of determining the cost below which sales may not be made, as provided in many codes, were presented by the NRA at the price sessions of the General Code Conference held here this week. The alternative methods were offered for criticism and discussion as a part of the move to secure some degree of standardization in the manner of handling this problem in codes.

In NRA's opinion, two methods of approach are open in effecting standardization of code requirements for accounting and cost finding: (a) to prescribe an Accounting method, complete in its outline of principles and definitions, to be supplemented by a Cost Formula which will contain the variations from or adjustments to be made in actual costs, for the purpose of determining the cost below which sales may not be made; or (b) to require a Cost Formula only, which will set out all of the elements to be included in determining the cost below which sales may not be made, and which will embody the same provisions relative to non-inclusion of certain items as would be included in the Cost Formula under (a).

While Plan (b) is simpler, NRA does not consider that it would accomplish permanently the desirable results which would ensue under (a). However, where (a) would work a hardship, particularly on small enterprises, Plan (b) is more desirable.

Under Plan (a) for manufacturers, members of the code would be required to conform to a standard method of cost accounting. From records so kept, cost would be determined by means of a formula. Overhead rates, including administrative and selling expense, would be determined on the basis of normal plant utilization. Interest, developmental work, special sales campaigns and deferred expense would not be included in the cost. Salaries of chief executives would have to be included only in reasonable amounts. No depreciation on idle facilities would be included, nor would the expenses of maintaining and protecting such idle facilities.

The simpler Plan (b) for manufacturers would provide nothing more than a formula which the code member would fill in from such records as he had available. The items which such a formula would include would be direct labor and material costs and manufacturing, administrative and selling overheads and expenses.

Under either plan, sales below cost as determined by the formula would be permitted where necessary to meet the lower prices of a competitor who was not selling below his cost. Modifications of the formulas proposed for both plans to adapt them to wholesale and retail businesses also were offered.

Ford Breaks Exclusive Dealership Policy

CLEVELAND — The Cleveland Packard Co. has taken on the Ford franchise, and in the future will operate as a joint dealership handling both Ford and Packard cars. This is believed to be the first appointment of its kind which the Ford company has made, as for many years it has adhered to a policy of exclusive representation.

Auto-Lite Co. May Change Its Name

TOLEDO, OHIO—At the annual meeting of the stockholders of the Electric Auto-Lite Co., to be held on March 27, a suggestion will be made to change the name of the company. What the change will be has not as yet been disclosed. It is expected that changes will also be made in the articles of incorporation to permit a majority vote of stockholders, instead of a specified percentage, to control all actions.

Polk Places January Car Sales at 61,000

DETROIT—On the basis of the 41 States reported, the Polk estimate for total passenger car sales in the United States in January has been slightly revised, and now stands at 61,000, against 79,821 last year. The Polk estimate for commercial car sales in the United States in January now stands at 22,000, nearly double the January, 1933, total of 11,713.

President Broadens Labor Board Powers

WASHINGTON — Further strengthening of the power of the National Labor Board is seen in the executive order issued March 3 by President Roosevelt. By this order the Labor Board may refer its findings directly either to the Attorney General or to the Compliance Division of NRA. In the latter case the Board's findings are not subject to review as they have been in the past, but the Division is empowered to take appropriate action. Expressing his approval of the order, Senator Wagner said:

"This order means that the Board can act directly, promptly and effectively in case of violation of Section 7a."

House Committee OK's Connery 30-Hr. Bill

Will Seek President's Support for Proposal

WASHINGTON — Encouraged by President Roosevelt's advocacy of an immediate cut in the work week, the House Labor Committee has approved unanimously the Connery 30-hr. Bill and will seek early consideration of this legislation by the House. This bill would make the adoption of the 30-hr. week mandatory in all coded industries, and reductions in wages and salaries now paid would be prohibited. A degree of flexibility is provided, however, since the bill sets up a board which would be empowered to permit a maximum of 40 hrs. per week for not more than three months where an emergency or a shortage in labor exists.

The bill further provides that labor have equal representation with management on code authorities. On the written complaint of any code authority against any manufacturer not operating under a code, the President would be empowered to bar his products from interstate commerce with a $500 penalty for violation.

At the hearings on the bill, it was opposed by General Johnson and by Labor Secretary Perkins. Despite this opposition, it is reported that Chairman Connery will endeavor to enlist administration support. In some quarters, the bill is regarded as a strategic move to quell the opposition of business to the selective shortening of hours urged by the President in his Code Conference speech.

Wayne County Shows Big Sales Gain in February

DETROIT—Wayne County new car registrations totaling 5133 for February represented a 150 per cent increase over February last year. Virtually every make except those in the highest price field showed a gain. For the third consecutive month Plymouth beat out Chevrolet for second place by a slim margin. Trucks showed an even larger gain of 360 per cent over February last year. Again virtually every make shared in the improved business. Dodge again out-registered Chevrolet to take second place with 118 units to Ford's 174. Total truck sales were 464 units.

Stewart-Warner Reveals Reorganization Results

Directors Propose Company Name Be Changed to Stewart-Warner - Alemite Corporation

CHICAGO—The annual report of Stewart-Warner Corporation, released this week, reveals that a sweeping reorganization of corporate structure, accounting, manufacturing and distribution has been effected, and that it now is proposed to readjust the capital structure and change the name of the corporation.

The report discloses that there was an operating loss of $991,014 for 1933, most of it occurring in the first six months, and a final net loss of $1,791,060. Expenditures for experimental and development work and depreciation on plant facilities not used in production have been charged directly against earnings, instead of against surplus as has been the practice in past years. The loss shown in the annual report for 1932 was $2,445,197, before charging $972,274 to surplus for development expense and depreciation on idle plant.

In addition, however, to these changes in accounting procedure, the directors performed what they consider "a major operation" in the matter of extraordinary write-offs and charges applicable to past years. As of Dec. 31, 1933, the sum of $2,262,759 was charged against surplus representing principally the reduction of idle machinery, equipment and plant not used in operation, to estimated realizable value; and in addition it is proposed by the board to make a further charge against the capital and surplus of $2,400,000 to cover charge-offs incident to the removal of the Bridgeport, Conn., plant to Chicago, and to provide for write-down of operating buildings to appraisal value. Such drastic charges, however, would result in capital impairment, and it is to remedy this that the board is proposing that the stockholders ratify at the annual meeting a change in par value of the issued shares of stock from $10 to $5 a share. This would create a capital surplus of $6,234,235 which, after all deductions, charge-offs and adjustments, would mean that there would be a final net capital surplus of $4,495,064 rather than a deficit.

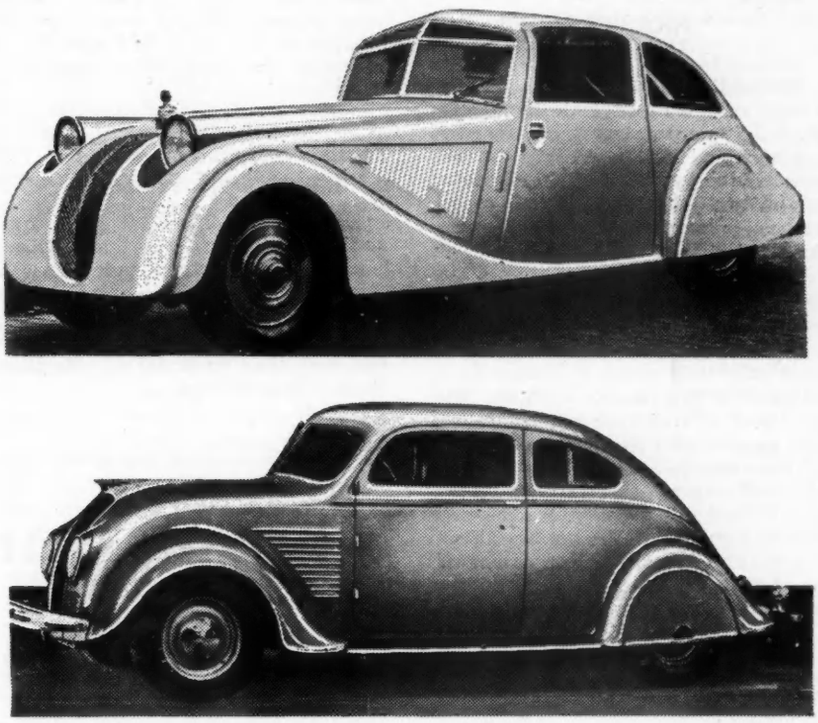
Consolidated balance sheet as of Dec. 31, 1933, shows a strong financial position with a working capital ratio of 3.67 to 1, and with cash and government securities alone nearly equaling all current liabilities.

It is also recommended to the stockholders that the name of the company be changed to "Stewart-Warner-Alemite Corporation."

The achievements of the present board of directors, since their election in June, 1933, are summarized in the report.

As to the outlook for the current year, it is pointed out in the annual report that sales of all the company's products in January, 1934, totaled $485,810, an increase of 130 per cent over a year ago, whereas the sales volume of $6,357,598 for the last six months in 1933 showed a gain of 70 per cent over the final half of 1932.

Foreign Built—American Manufactured



The general lines of the Delage (above) and the DeSoto (below) are almost the same but there is a marked difference in effect obtained in their application due chiefly to the mixture of angles and curves in the former car and the blending of curves in the latter. Aerodynamically the results may be about equal; artistically, well, are they? Here is a striking example of the contribution of mass production to appearance value. And there is another important contribution. The foreign built car sells for several times the price of this representative of American manufacturing

In the refrigerator division alone it is stated that during the months of January and February, 1934, sales were greater than for the full year of 1933.

General Motors Sales Spurt in February

NEW YORK—General Motors sales to consumers in February totaled 58,911, an increase of 151 per cent over January total of 23,438, and a gain of 39 per cent over February, 1932.

February sales to dealers totaled 82,222 against 46,190 in January and 50,212 in February, 1932. The difference between sales to United States dealers and consumers during the month amounted to 23,311, which represents the increase in domestic dealer inventories.

World sales to dealers numbered 100,848 as compared with 62,506 in the previous month, and 59,614 in the corresponding month last year.

In the first two months of 1934 domestic deliveries totaled 82,349 against 92,933 in the similar period last year, production delays being primarily responsible for the decrease. Sales to United States dealers in January and February aggregated 128,412 against 122,486 in 1933. World sales to dealers totaled 163,354 as compared with 141,731 in the first two months of last year.

Foreign sales in February amounted to 11,195 units, an increase of 62 per cent over last year. For the year to date overseas sales have totaled 21,512, representing a gain of 72 per cent over the similar 1933 period.

John W. Bolger

PHILADELPHIA—John W. Bolger, vice-president of the Allbestos Corporation, of this city, died on Sunday, March 4, as the result of a stroke. He was a pioneer in the asbestos fabric industry, and when the automobile industry developed he naturally entered upon the manufacture of brake lining and clutch disks. Mr. Bolger was 75 years old at the time of his death. For years he was a prominent figure in the Asbestos Brake Lining Association, Inc.

Budd Workers Vote on Representation Plan

NRA Will Supervise Poll; Strikers Protest Election

PHILADELPHIA, March 8—Employees of the Edward G. Budd Mfg. Co. will vote tomorrow, as forecast last week by *Automotive Industries*, under the supervision of the National Compliance Director of NRA, to determine what form of self-organization, if any, they shall have. The poll will be taken in accordance with the National Compliance Board recommendations of Feb. 24.

The ballot will provide the following alternatives:

1—Self-organization through the plan of employee representation as proposed by the 19 representatives elected last fall.

2—Self-organization through the United Automobile Workers Federal Labor Union No. 18763 of the American Federation of Labor.

3—Self-organization through any other agency that any employee may designate.

4—No self-organization.

The poll will be conducted by tellers and assistants, appointed by the National Compliance Director.

Meanwhile, representatives of employees who struck last fall are in Washington attempting to prevent the election. National Compliance Director Davis told them that the election would be conducted as scheduled, but they are continuing their efforts in other quarters. The delegation is contending that the election should be confined to employees in the production and shipping departments in which the strike occurred and not be extended to include all plant employees as planned. They also objected that the 800 strikers still unemployed would not be entitled to vote. Hence, they argued, the men who fought the strike would have no voice. Mr. Davis is reported to have told them that if they would provide him with the names and badge numbers of the unemployed strikers he would endeavor to have them reinstated. The delegation also objected to holding the election on company property.

In a letter to the Compliance Board dated Feb. 25, Mr. Davis revealed that Mr. Budd has stated that he understood "available for employment" as used in the Board's recommendations to "refer to certain of them who, by acts of violence in the course of this unwarranted strike or by their conduct in fomenting it, have demonstrated their unavailability for reemployment." In reply, Mr. Davis said that the Board's recommendations meant that old employees would be preferred to new employees for all work of the kind they were formerly employed to do. The words "available for employment," Mr. Davis said, excluded only men who are not available for reemployment because they have been reemployed elsewhere or have otherwise become unavailable for reasons beyond the company's control. Any disputes arising over the interpretation of "available" may be referred to the Compliance Director.

Nash to Exhibit Again at Century of Progress

KENOSHA—The 85-ft. glass tower at the Century of Progress again will hold a display of Nash-made cars when the exhibition is re-opened in June. The contract with the Whiting Corp. for the use of the tower having been renewed this week by C. H. Bliss, Nash vice-president.

Frank R. Tate

ST. LOUIS—Frank R. Tate, a leading figure in St. Louis automobile circles for 30 years, died suddenly of heart disease March 4. He was 56 years old.

Mr. Tate came to St. Louis during the 1904 World's Fair as representative of the Goodrich Rubber Co. He remained, establishing the Tate-Gillam Motor Car Co., Dodge distributor. This company was succeeded by the Tate Motor Co., which Mr. Tate sold several years ago. His last active connection with the industry was as manager of the 1933 local automobile show.

Funeral services were held March 5, with burial at Akron, Ohio, the following day. Mrs. Tate survives.

Business in Brief

Written by the Guaranty Trust Co., New York, exclusively for Automotive Industries

After a slight recession in the preceding week resulting from inclement weather, general business last week showed some improvement. Retail sales were well maintained despite storms in the early part of the week. The basic industries held up well. Steel operations were at the highest level since last August and exceeded the February rate in both 1933 and 1932. The movement of spring goods during February was not up to expectations, although it surpassed that a year ago. General wholesale business during February is estimated at from 30 to 40 per cent above that in the corresponding month last year.

Drop In Car Loadings

Railway freight loadings during the week ended February 24 totaled 573,371 cars, which marks a decrease of 25,525 cars below those during the preceding week, an increase of 111,056 cars above those a year ago, and an increase of 37,873 cars above those two years ago.

Food Index Above 1913 Level

According to the index compiled by the Bureau of Labor Statistics, retail food prices on Jan. 30 were 5.8 per cent above the 1913 average. On Jan. 16 they were 5.2 per cent above the 1913 level, and on Jan. 2 they were 4.5 per cent above.

Power Production Increase

Production of electricity by the electric light and power industry in the United States during the week ended Feb. 24 was 15.5 per cent above that in the corresponding period last year.

More Cotton Used

According to a report issued by the New York Cotton Exchange Service, the world cotton textile industry during the six-month period ended Jan. 31, 1934, used more cotton than in any corresponding period since 1929-30.

Oil Production Drops

Average daily crude oil production for the week ended Feb. 24 amounted to 2,226,050 bbl., 43,050 bbl. more than the Federal allotment, as against 2,289,150 bbl. for the preceding week and 2,192,600 bbl. for a year ago.

Fisher's Index

Professor Fisher's index of wholesale commodity prices during the week ended March 3 registered the seventh consecutive weekly advance. The current figure is 74.4, as against 74.2 for the week before and 73.7 for two weeks before.

Federal Reserve Statement

The consolidated statement of the Federal Reserve banks for the week ended Feb. 28 showed decreases of 2,000,000 in holdings of discounted bills and of $13,000,000 in holdings of bills bought in the open market. Holdings of government securities remained unchanged.

Consumers' Board Urges Strict NRA Supervision Where Codes Permit Any Form of Price Control

WASHINGTON—Critical reexamination of all code provisions permitting any form of price control and rigid supervision by NRA to prevent the abuse of such controls, is urged by the NRA Consumers' Advisory Board in a report submitted to General Johnson. Among the forms of control dealt with in the report are open-price systems, cost provisions and cost accounting systems, restriction of output by allocation or by limitation upon machine hours or plant operation, or upon the installation of new machinery, systems for artificially determining freight charges and market areas, arrangements to establish fixed price differentials for different classifications of customers, reasale price maintenance and price fixing. In connection with each of these forms of control, the Board makes recommendations designed to safeguard the consumer against predatory price-raising as well as to provide producers and merchants with reasonable protection against predatory price-cutting.

The report is of particular importance at this time when many industries and trades are contending that present price controls must be retained, and in some cases strengthened, if business is to be able to absorb the increased labor costs which the government is demanding.

In general, the Board appears to be strongly in favor of letting the free play of economic forces set prices so far as that is possible without destructive competition, and that where restraints are permitted it believes that they should be rigidly supervised by NRA.

In detail, on the subject of open-price systems, it believes that NRA should point out frequently and forcefully that uniform price fixing is not a part of the NRA program, and unless sanctioned by a specific provision of an approved code is contrary to law. The Board does not believe it is desirable to eliminate the reporting of prices and price transactions. To eliminate pressure on those who would keep prices down, it suggests that actual prices charged on sales already made be reported to an NRA agency in confidence, which agency would supply code members only with the range of prices as of a given date. If the reported prices indicate the existence of questionable conditions, the Board feels that such an agency can supply remedies better than those who have private interests at stake, such as the members of a code authority.

In codes prohibiting sales below cost, the Board believes that individual cost rather than average cost should govern, and that sales below cost to meet competition of lower cost producers should be permitted. Moreover, cost formulas should be approved by NRA and their operation carefully supervised. In arriving at cost the Board would consider labor and materials, plus overhead in the ratio that present output bears to normal output, but not selling or financial costs. Believing that the object of prohibitions on sales below cost is to stop predatory price cutting, the Board believes that a more effective way to attain this end would be to outlaw it in general terms and have an agency in NRA to deal with specific cases promptly.

Although recommending that a fact-finding study be made of all basing point, zone freight and other market dividing systems in approved codes, the Board considers it undesirable that NRA experiment further with price systems of this type.

Price chiseling by very large buyers can best be handled, in the Board's opinion, by an administrative agency set up to deal with complaints on this score. It considers this to be a more desirable plan than fixing price differentials for different classes of customers which "freeze the present system of distribution." Inferentially, it would appear that if large buyers are restrained, the Board believes that wholesalers are not entitled to further protection of their margins against the competition of more direct methods of distribution.

Resale price maintenance provisions should be eliminated from codes, the Board believes, since they tend to deny the consumer the advantages which accrue to him as a result of the efficiency of some distributors. The Board also urges the elimination of price-fixing from all codes, holding in the case of wasting natural resource industries that allocation of production at the source is a better remedy. Another recommendation is that quality standards and informative labelling be made a part of codes.

"Thumbs Down" on Clinics MEMA Bulletin Advises

NEW YORK—Revived activity on the part of jobbers in promoting their own individual clinics, anniversary celebrations, branch store openings, and similar events with the accompanying requests for direct or indirect financial support from their manufacturing suppliers has led the Motor and Equipment Manufacturers Association to issue a bulletin to its members urging them to stick to their guns in turning down such requests.

Willys Prices Up

TOLEDO—Prices on the Willys 77 line have been increased to $450 for the four-door sedan and $430 for the two-passenger coupe. These models formerly listed at $445 and $395 respectively.

Hudson Gets Tax Refund

DETROIT—Hudson Motor Car Co. has received a refund of $49,328 as an over-assessment of federal taxes for the year ended Nov. 30, 1919.

Gets Financial Aid at Cost of Control

André Citroen

France's Henry Ford has yielded to his bankers. Following soon after a sharp drop in the price of Citroen stock in the Paris Bourse, it was announced by associates of André Citroen that ample credits have been obtained to insure the continued operation of his vast automobile plants on a normal basis. Commenting on these developments, the *Agence Economique et Financiere* said:

"It appears that the concentration of financial and industrial direction of such an important enterprise in the hands of a single person, as has been the case with Citroen for the past three years, has given rise to disadvantages which unfavorably affected the standing of the company's stock on the Bourse. It is learned that this great manufacturing concern, which does honor to French industry, has obtained all the financial backing necessary for operating. At no time has it ceased to be a good commercial proposition.

"With this financial aid Citroen will undergo reorganization, placing it in charge of more rational direction with the support and control of qualified specialists."

Annual Statement Shows Marked Improvement

Graham-Paige Motors Corp.

DETROIT — Graham-Paige Motors Corporation earned $66,997 in 1933 against a loss of $2,810,852 in 1932. This marks the first time the corporation has reported an annual net income since 1928. According to a statement by Joseph E. Graham, president, the corporation surplus was increased by $128,604 during the year and $100,000 of the corporation's bonds were retired in anticipation of sinking fund requirements in 1934. During the past year, Mr. Graham says, the balance of unprofitable sales branches was sold and replaced by strong distributors.

General Electric Co.

SCHENECTADY, N. Y.—A preliminary report of the General Electric Company shows that sales billed during the fourth quarter of 1933 amounted to $39,211,122, compared with $34,112,816 for the same quarter of 1932, and were the largest for any quarter since the second quarter of 1932. Total sales billed for the year 1933 were $136,637,268 compared with $147,162,291 for 1932.

Earnings for the year 1933 available for dividends amounted to $13,429,739 compared with $14,404,110 in 1932. Total current assets amounted to $175,314,394 and current liabilities amounted to $13,302,577, a ratio of 13.2 to 1.

Electric Auto-Lite Co.

TOLEDO—Electric Auto-Lite reports for 1933 a net profit of $684,372 after all charges, against earnings of $1,364,059 in the previous year. Profits last year were reduced by a charge of $320,425 for doubtful accounts. Current assets total $5,406,941 against current liabilities of $888,149.

International Harvester

CHICAGO — International Harvester Company sustained a net loss of $1,886,000 in 1933 as compared with loss of $7,582,000 in 1932.

Autocar Co.

PHILADELPHIA — Autocar Company for 1933 reports a loss, after charges, of $317,219 against a loss of $1,077,641 in 1932.

Tung-Sol Lamp Works

NEW YORK — Net income, after charges, of $163,242 is reported by Tung-Sol Lamp Works, Inc. This contrasts with net loss of $100,022 in 1932.

Cleveland Welding Corp.

CLEVELAND — Cleveland Welding Corporation, controlled by Motor Wheel Corporation, earned $42,036 in 1933 contrasted with a net loss of $68,913 in 1932.

Marlin-Rockwell Corp.

NEW YORK—A net profit after all charges of $110,535 was earned by the Marlin-Rockwell Corporation in 1933. This contrasts with a net loss of $123,388 in 1932.

Bethlehem Steel Co.

NEW YORK — Bethlehem Steel Company reports net loss after all charges and interest of $8,735,723 for 1933 against a loss of $19,400,431 in the preceding year.

Mack Trucks, Inc.

NEW YORK—Mack Trucks, Inc., and subsidiary companies report combined net profit for 1933 of $171,237 before providing for depreciation of $619,145.64 and a reserve of $500,000, resulting in a total loss of $947,908.64. In 1932 the total loss was $1,479,598.37 after providing for depreciation of $617,225.79.

Scovill Manufacturing Co.

WATERBURY, CONN. — Scoville Manufacturing Co. and subsidiaries show remarkable gains for 1933 with a net profit of $577,059 after all charges, compared with a net loss of $1,322,933 in 1932.

Perfect Circle Co.

HAGERSTOWN, IND.—The Perfect Circle Co. and The Perfect Circle Company, Ltd., of Toronto showed a substantial increase in earnings in 1933 as compared with 1932. Consolidated net income for 1933 after all deductions was $397,039 as compared with $252,962 for 1932. Consolidated balance sheet shows current assets of $2,297,783 and current liabilities of $244,482, a ratio of 9.4 to 1.

Wilcox-Rich Corp.

DETROIT — Wilcox - Rich Corp., subsidiary of Eaton Mfg. Co., reports for 1933 profit of $341,150 after depreciation and other charges but before its proportion of net profit of $2,604 for the year of Eaton-Erb Foundry Co. In 1932 the profit was $112,779 before its proportion of net loss of $44,120 of the Eaton-Erb Foundry.

Adam Opel Co.

BERLIN, GERMANY—The Adam Opel Company which is controlled by General Motors reports net earnings of 5,000,000 marks ($2,000,000 approx.) for 1933, compared with a loss of 340,000 marks ($136,000 approx.) in 1932.

Eaton Manufacturing Co.

CLEVELAND—Eaton Manufacturing Company and subsidiaries report for 1933 net profit after interest, depreciation, taxes, etc., $360,135 compared with net loss of $674,182 in 1932.

Electric Storage Battery Co.

PHILADELPHIA—The Electric Storage Battery Co. reports for 1933 net income of $2,022,206 or $2.22 a share on capital stock, against $1,259,859 or $1.39 per share in 1932.

Timken-Detroit Axle Co.

DETROIT—Timken - Detroit Axle Company reports for 1933 net loss after all charges of $1,256,869 compared with a loss of $1,193,873 for 1932.

Cincinnati Ball Crank Co.

CINCINNATI — Cincinnati Ball Crank Co. and subsidiaries report for 1933 net loss of $85,912 after expenses, depreciation and other charges, compared with a loss of $110,823 in 1932.

Ward-LaFrance Truck Corp.

ELMIRA, N. Y.—Ward-LaFrance Truck Corp. reports for 1933 net loss of $14,563 after expenses, interest, bad debts and other charges.

Sparks-Withington Co.

JACKSON, MICH.—Sparks-Withington Co. reports for six months ended December, 1933, net loss of $164,456, compared with loss of $200,996 for corresponding period in 1932.

Motors Now Buying for Current Needs

Continuance of First Quarter Prices Halts Protective Purchasing

NEW YORK—Automotive consumption continued to be the chief factor in providing steel producers this week with sufficient specifications to permit of stepping up their rate of operations another 5 per cent, bringing the American Iron & Steel Institute's official figure of mill capacity actively engaged to 47.7 per cent. This is very close to the peak rate for 1933 of 49.42 per cent.

Distribution of orders over the different steel producing districts is uneven, Chicago district mills having been helped greatly this week by the receipt of heavy specifications for steel bars from motor car manufacturers. Individual mills catering to automotive consumers have a much more comforting backlog than have those specializing in descriptions of steel that find but little application in automotive plants.

In some quarters, however, it is claimed that the character of automotive buying is now undergoing a change. While much of it so far this year has been by way of seeking protection against possible price advances in the second quarter, this incentive, it is argued, is now lacking and second quarter takings will reflect current requirements. Those holding to this point of view assume that because the traditional date for making price changes has been permitted to pass without such action being taken, it is certain that there will be none until third-quarter prices come up for consideration. If conditions so shape themselves that third-quarter advances seem certain during the second half of the second quarter, there would again be much protective buying.

Steel statisticians estimate that at the beginning of the year automotive consumers carried in stock between 500,000 and 750,000 tons more steel than they did at the beginning of 1933. While the manner in which steel was purchased and shipped in the last two months indicates that there has been a change in the policy of important automotive consumers from hand-to-mouth buying to one of carrying sufficient reserves of routine material to guard against overnight price upsets, estimates of the aggregate tonnage of steel in the hands of motor car manufacturers and parts makers are predicated on nothing but conjectures which at best can yield nothing better than a guess that seems plausible.

Pig Iron—All of the distributing and primary markets report a growing interest on the part of automotive foundries in second quarter shipments. Cincinnati sales agents are reported to have been instructed to restrict second-quarter bookings to April for the time being. This would indicate the possibility of advances being contemplated for May shipments. The general attitude of blast furnace owners, however, appears to be to let well enough alone.

Aluminum—Unchanged.

Copper—Brass and copper products mills have been working up more copper of late than earlier in the year. The market for electrolytic rmains at 8c., delivered Connecticut valley points.

Tin—Consuming demand light, with spot Straits quoted at 52½c. at the week's opening.

Lead—Quiet and steady.

Zinc—Demand is light. Prices unchanged.

Johnson Warns Industry of Impending Wave of Strikes

WE have got to accord labor the rights guaranteed by this act. There is no law prohibiting a company union as such if there is no interposition whatever by employers, and if the men freely choose it. But 99 times of a 100, you and I know that this is not the case.

Let's not kid ourselves. Let us act before Congress acts. Let us obey the law. Call in Senator Wagner's board. Let your men express their choice under those public auspices from which no question can arise. Let's get this troublesome question settled promptly and for all time.

We know something about what is toward in this country—the worst epidemic of strikes in our history. Why suffer it? Here is a way out. Play the game. Submit to the law and get it over quickly.—*General Johnson before the General Code Conference.*

Canada Gets 80-Car Quota

MONTREAL—Following Ottawa's recent diplomatic protests against French quota restrictions it is learned that France is prepared to give Canada an automobile quota of 80 cars a month—at the present time Canada has no automobile quota in France.

National Labor Board Hears USL Charges

WASHINGTON—Charges against the USL Battery Co. of discriminatory discharges of union employees and refusal to bargain collectively were scheduled for consideration by the National Labor Board on March 8. The Labor Board announcement of the hearing states that "Despite the fact that on Feb. 16 the majority of 272 workers of the USL Battery Co. of Niagara Falls, N. Y., selected representatives of the Battery Workers Federal Labor Union No. 19130 to bargain collectively with the management, it is claimed by union representatives that the company will not bargain. In a decision of Feb. 23 the Buffalo Regional Labor Board ruled that the management should bargain with the union."

Wagner Bill Would End Company Unions

Legalizes Closed Shop and Provides Majority Rule in Labor Elections

WASHINGTON—The Wagner Bill to set up a permanent National Labor Board with far-reaching powers, to legalize the closed shop and to outlaw the company union, has aroused a storm of protest from industries all over the country. Nevertheless, its ultimate fate, it is felt in some quarters here, depends on whether it is given administration support.

In explaining his bill, which is frankly intended to close what labor regards as gaps in present legislation, Senator Wagner made no bones about the fact that it was intended to abolish "employer-dominated" unions. It would permit employers only the right of forming or assisting associations to provide group insurance, or for other similar purposes. Any participation by an employer in the formation of an organization for collective bargaining, even a suggestion that the workers consider a works council plan, would be an unfair labor practice and subject to penalties.

Moreover, closed shop contracts, which have been held illegal under Section 7a of NIRA, would be legalized, as the Bill would permit employers to make joining a particular union a condition of employment. In other words, while Section 7a prohibits discrimination against workers because they belong or do not belong to a particular union, the Wagner Bill would permit discrimination against men who do not belong to a union.

The Bill would also impose the will of a majority of employees on the minority; that is, if the majority selected a particular union to represent it, the minority would have to go along. Provision, however, is made for dealing with groups to take care of craft unions.

Industry would be a lot more favorably disposed to the Bill if the Senator had seen fit to provide some restraints on racketeering labor leaders, whose existence is admitted even by organized labor. Business and labor is as much in need of protection against that type of labor leadership as labor is in need of protection against chiseling employers.

Pyke Is McCord P. A.

DETROIT—Donald A. Pyke has been appointed purchasing agent of the McCord Radiator and Manufacturing Company, to succeed J. H. Cooper, who has been made assistant to the president. Mr. Pyke has been chief estimator of the company for a number of years.

Edwin J. Walters and William H. Bearinger will be assistant purchasing agents.

"Met" Section to Hold Two Meetings in March

NEW YORK—Members of the Metropolitan Section, Society of Automotive Engineers, will hold meetings here on the evenings of March 15 and 29. Of these, the first will be devoted to discussion of Spark-Ignition Fuel-Oil Engines, with Joseph A. Anglada acting as chairman and F. H. Dutcher, Instructor in the Mechanical Engineering Department, Columbia University, introducing the subject. There will also be brief papers by Frank Mock, research engineer, Bendix Research Corporation, and Dr. Maurice J. Zucrow. A lively discussion following these papers is anticipated.

Marine Reduction Gears will be the subject of the second meeting, which will be in charge of S. G. Harris, vice-chairman of the Section representing its Marine Activity. Walter J. McInnis, Eldredge McInnis, Inc., of Boston, will present the paper and there will be discussions by many Section members and others affiliated with the motor boat industry.

Both meetings will be held at the Roger Smith, 40 East Forty-first Street, and both will start promptly at 7.45 p. m. Each meeting will be preceded by an informal dinner starting promptly at 6.30.

MEMA Charges "Japs" Compete Unfairly

Unfair competition resulting from Japanese imitation of American automotive products and trade-marks in both domestic and foreign markets has reached a stage that calls for joint action by affected manufacturers, governmental agencies, and all other interested parties according to A. H. Eichholz, general manager of the Motor and Equipment Manufacturers Association, who has issued a bulletin on the subject to members of the MEMA.

The bulletin cites numerous instances in which popular American products are imitated by Japanese manufacturers, packaged and advertised in such a way as to take full advantage of the standing of the American products, and sold directly in competition with these products.

Reo Reports Orders Highest in Years

LANSING — Ray DeVlieg, works manager of the Reo Motor Car Co., has announced that truck shipments for the month of February were more than three times those of February, 1933, and for the year to date are 138 per cent over the corresponding period of 1933. Production on the 1934 Reo Flying Cloud will start on March 10. Orders on hand, said DeVlieg, are "the highest in years."

Backed Out of A Bone Yard

The Jersey City Police Bureau of Repairs, aided and abetted by a group of CWA mechanics and a contribution of at least $635.01 in cash from the city treasury, have put together free "pickings" from an automotive boneyard to make a police emergency truck which the proud scavengers proclaim to be equal in appearance to a $9,200 vehicle for similar purposes bought by the city two years ago. Bullet-proof glass, hydraulic jacks, flood lights and other items of equipment which had to be purchased were added to the frame, fenders, bumpers, wheels, axles and other parts excavated from the junk yard to complete this resurrected "new deal" vehicle.

Wilson Heads Willys

TOLEDO—David R. Wilson has been named president of Willys-Overland, Inc. He is well known in the industry as president of the Wilson Foundry & Machine Company of Pontiac.

The receivers put a force of about 600 men to work at the beginning of this week starting on the production of 7,000 cars authorized by federal judge Hahn. This force is expected to increase to about 2500 when production gets in full sway about March 15.

Lukenweld Elects Chapman

COATESVILLE, PA.—Everett Chapman, who joined Lukenweld, Inc., division of Lukens Steel Co., Coatesville, Pa., early in 1930 as Director of Engineering and Research, has been elected vice-president of the corporation.

CALENDAR OF COMING EVENTS

SHOWS

Cleveland (Automotive Service Industries) ..... Nov. 5-9
Berlin ..... March 8-18
Geneva, Switzerland ..... March 16-25

MEETINGS

U. S. Chamber of Commerce, Washington ..... May 1-4
S.A.E. Summer Meeting, Sararac Lake, N. Y. ..... June 17-22

U. S. Intervention Averts Strikes

(*Continued from page 314*)

structions to its locals to demand a 20 per cent increase in pay, as reported by *Automotive Industries* on Feb. 17.

As to the first two demands, factory officials say they have always been willing to bargain collectively with representatives of their employees, but that they have insisted that persons claiming to represent the workers present evidence of whom they represent, which evidence has not been forthcoming. This policy is expected to be construed by the union representatives as non-recognition. As to the charge of discrimination, it is possible that this is based on the discharge of union members who have been "organizing" on company time, thus reducing their efficiency and leading to their dismissal.

When the strike situation developed, W. S. Knudsen, executive vice-president of General Motors, Donaldson Brown, vice-president of General Motors, and Alvan Macauley, president of the N.A.C.C. and of Packard, were all in Washington representing the industry at the General Code Conference. They went into conference with the National Labor Board and the agreement to postpone the strike was effected. The Labor Board previously had sent a conciliator to Detroit.

According to newspaper reports, Mr. Knudsen said in Washington that he did not regard union recognition as an issue since it was required by law. As to the wage increase demand, he was quoted as saying "They might as well reach for the moon."

The selection of the four plants in question seems to have been a matter of strategy. Employees at Fisher No. 1 producing Buick bodies and Buick plant proper were considered more ripe for action than others, due to a layoff of 1500 men last week in line with somewhat reduced production. Fisher No. 2 producing Chevrolet bodies for Flint zone is probably best Federation-organized plant in this section. Hudson is probably as well organized as any major automotive plant in the Detroit metropolitan area.

The strike ultimatum is reported to have been productive of a considerable increase in A. F. of L. membership in Flint, it being said that new members were signed up almost by hundreds at the mass meeting for votes on strikes.

It became known yesterday that in the past weeks Buick has increased wages up to a point where the average is 72 cents per hour, which is equivalent to 1928 rates.

It is considered highly likely here that when the Washington conferference opens on the 14th that the discussion will be broadened to include the entire automotive industry rather than the scattered plants at present affected.

Philadelphia S.A.E. Hears Mougey on Lubrication

PHILADELPHIA—H. C. Mougey, chief chemist, General Motors Research, speaking before Philadelphia Section SAE this week presented one of the most important papers on lubrication that any group has been privileged to hear. An informal talk made intensely interesting by a great number of slides providing scientific evidence of the desirability of using crankcase lubricants of low viscosity not only during winter months but for the entire year.

Mr. Mougey showed figures for the past winter months which prove the effectiveness of 10W and 20W oils for low temperature operation. Other test data were cited to prove the desirability of using oils of lower viscosity, say SAE 30, for summer running.

More than 200 people turned out for the meeting which was presided over by J. Bennett Hill, chief chemist, Atlantic Refining Co. Details of the paper will be given in *Automotive Industries* next week

Wholesale Fact-Finding Committee Meets

WASHINGTON — The Fact-Finding Committee formed to report on the advisability of making the price maintenance sections of the automotive wholesale code effective, met here on Tuesday with H. Bertram Lewis in the chair.

One of the features of the meeting was an effective presentation of the automobile manufacturers' side of the questions at issue.

Present at the meeting were Messrs. Norris, McQuay-Norris; Darling, Borg Warner; DeWitt, Champion; Anderson, General Motors; Stambaugh, Hudson; Kilpatrick, Chrysler; Munn, N.A.D.A.; Tarbill, N.A.D.D.; Creamer, Wheels, Inc.; Hossellman, Ohio jobber.

Sales Club Hears Weaver

NEW YORK—H. G. Weaver spoke here before the Sales Executives Club on Thursday of this week on the subject of Consumer Research. Mr. Weaver is head of the consumer research activities of the General Motors Corporation.

W. O. Ltd. of Canada Is Liquidated

TORONTO—Announcement of the liquidation of Willys-Overland Limited of Canada was made by President T. A. Russell at the annual meeting of the Russell Motor Car Company, Limited, Toronto, the holding company for Canadian Willys-Overland, Canadian Acme Screw and Gear Limited and the Canada Cycle & Motor Company Limited.

The Canadian plant was directly affected when Willys-Overland, Inc., went into receivership at Toledo, Ohio, one year ago, Mr. Russell stated, and the Toronto factory had been completely closed down despite efforts to obtain other business.

The other two subsidiary companies had been able to show increases for the past year.

Bundy Tubing Co. Organizes Subsidiary

DETROIT—Bundy Tubing Company, manufacturers of Hydrogen-Welded steel tubing, announce the organization of a subsidiary company known as H. W. Bundy, Inc. The officers of the new company are: W. W. Anderson, president; T. M. Rude, vice-president; A. C. Winger, secretary and treasurer, and H. J. Blair, superintendent.

H. W. Bundy, Inc., will take over the commercial parts Copper-Hydrogen-Electric-Welding production of the parent company other than tubing. Production includes both custom Hydrogen-Welding of parts supplied by other manufacturers ready for welding, and also the company production of the finished products.

General offices will be maintained in the plant of the Bundy Tubing Company at 10951 Hern Avenue. Manufacturing will be done at the former Bundy Tubing Company plant, 4815 Bellevue Avenue.

Detroit Section to Hear Rickenbacker on Air Mail

DETROIT — Col. E. V. Rickenbacker will discuss the recent cancellation of air-mail contracts before the Detroit Section of the S. A. E. at its monthly meeting on March 19. F. F. Kishline, Graham-Paige assistant chief engineer, also will speak, his subject being superchargers, while C. E. Bleicher, Chrysler master mechanic, will discuss modernized production methods.

1933 Gas Consumption

NEW YORK—Gasoline consumption in 1933 was less than one-half per cent under 1932, according to final figures issued by the American Petroleum Institute. Consumption in 1933 totaled 15,433,871,000 gallons against 15,500,366,000 in the preceding year.

Faint Joins Udylite

DETROIT — The Udylite Process Co. has appointed Harold W. Faint to its sales engineering staff with headquarters in Chicago. Mr. Faint is well known as an expert in the metal cleaning and plating field.

Federated Sales Names Sweeney

BOSTON — Federated Sales Service has appointed J. Woods Sweeney, to act as its New York Divisional Manager.

Investment Trusts Favor General Motors & Chrysler

NEW YORK—Examination of 78 leading trust statements shows a general shifting toward industries giving promise of early recuperation from the depression, such as petroleum, automotive and steel, while public utilities lost popularity in the year, according to Frazier, Jelke & Co. Indicative of the change in trust management attitude, General Motors becomes the most popular common stock investment medium, usurping the position held by Consolidated Gas of New York, while the latter drops out of the first ten leaders for the first time since these annual studies began. The ten most popular stocks in this year's compilation are General Motors, American Gas & Electric, du Pont, Chrysler, Union Carbide, Standard Oil of New Jersey, J. C. Penney, Chesapeake & Ohio, Public Service of New Jersey, and American Telephone. This list contains only three utilities, contrasted with seven in the 1931 most popular stocks. Chrysler and J. C. Penney appeared in the select list for the first time in the five years the studies have been made.

Two New Goodrich Tubes

AKRON—Two new passenger car tire tubes, one of which will not be cut to ribbons if run flat, and the other a puncture sealing tube incorporating new principles for a product of this kind have just been introduced into its line as 1934 innovations and are now available for national distribution, it is announced by The B. F. Goodrich Company. The first is named the Gold and Black tube, while the puncture sealing tube is named Seal-O-Matic.

(You may obtain a picture of these new products by writing The Department of Public Relations, The B. F. Goodrich Company, Akron, Ohio.)

Gets Canadian Sales Rights For Mercedes-Benz Diesels

TORONTO — The recently formed Dominion Diesel Limited of Toronto has introduced the Mercedes-Benz Diesel engines, produced in Germany, in the Dominion, for which it has secured the exclusive Canadian sales rights. Light types for bus and truck installations are being featured.

Frederickson Becomes General Man. of Arrow Head Products

MINNEAPOLIS—F. O. Frederickson has been elected vice-president and general manager of the Arrow Head Products Co. of this city. Floyd C. West has been named vice-president in charge of sales, while W. E. Wilbert has been elected vice-president in charge of production.

NEW DEVELOPMENTS

Automotive Parts, Accessories and Production Tools

Machine Checks Involute Gears

A Universal machine for checking involute gear tooth profiles has been announced by the Michigan Tool Co., Detroit, Mich. This machine employs a sine bar similar to those in use on other equipment made by this company. The function of the sine bar in this case is to act as a compensator for the difference between the length of arc of 1 deg. on the friction disc that originates all the machine movements, and the length of arc of 1 deg. on the base circle of the gear being checked.

Michigan Involute Checker

The friction disc is integral with the work-holding spindle and imparts movement to the sine bar carriage. Each degree of rotation of work is shown on a scale alongside the sine bar carriage. The angular setting of sine bar controls the movement of the indicator head, which is mounted on balls in "V" grooves and counterweighted to hold it against the sine bar. The indicator head moves at right angles to the movement of sine bar carriage so that the smaller the gear being checked, in comparison to the friction disc, the smaller the angular setting required on sine bar.

By use of two indicators and a reversible indicator finger, both sides of a gear tooth may be checked without dismounting, turning gear upside down, or otherwise changing the setup.

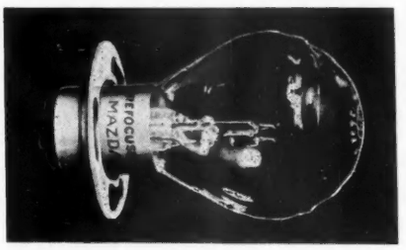
Pre-Focused G.E. Headlight Lamp

A new pre-focused headlight lamp has been announced by the Incandescent Lamp Department of General Electric Company at Nela Park, Cleveland, Ohio. It fits in with the trend toward streamlining by permitting the design of smaller headlamps without sacrifice of optical efficiency, and it insures better and more uniform performance of the headlamps.

The pre-focused lamp has a flanged collar, and looks similar to the usual Mazda headlight lamp with the collar added. The collar has three slots, or "buttonholes," by means of which it is held to its seat in the socket. On the under side of the flange there are three small buttons, or bosses, which in service are held directly against a flat on the reflector itself. The filament is located with great accuracy with respect to these three bosses and the outside diameter of the collar. The usual inaccuracies incident to the placing of the lamp in the socket, and the socket in the reflector, are eliminated, for in this case the lamp really seats against the reflector itself.

The prefocusing operation is an added step in the manufacture of the lamp. In this operation the collar is held in a precision jig, the lamp is inserted and the filaments lighted. Images of the filaments magnified many times are projected through an optical train to a focusing chart. By means of micrometer adjustment the operator moves the bulb until the filaments are perfectly centered with respect to the collar. While held in this position, the collar is soldered to the base.

By means of a specially designed holding device, the accuracy of filament positioning in the reflector is increased threefold over that of good modern "fixed-focus" equipments. The pre-focused lamp can be used only in a specially designed socket which has three projecting pins that engage the "buttonholes" on the collar of the lamp. To facilitate insertion, the base is marked "TOP" and the collar has a notch which should be turned to the top as insertion is started. When installing the lamp it is necessary to make certain that the wide ends of the "buttonholes" engage the pins of the socket. When pressed in firmly and rotated to the right, or clockwise, the lamp will click into its seat.



G.E. Prefocused Mazda

We understand that the pre-focused lamp will be used on a large number of the 1934 cars.

Van Dorn Bench Grinder

A new 7-in. ball-bearing electric bench grinder has been announced by the Van Dorn Electric Tool Co., Towson, Md. It is intended for sharpening edged tools and miscellaneous grinding, wire wheel brushing and buffing. But it is especially suitable for grinding and wire brushing odd-shaped pieces, due to the new extended end-bell design. The wheel guards have ample clearance to accommodate wire wheel brushes, and the end covers are easily removed for making changes. These wheel guards are adjustable for grinding in any position on the circumference of the wheel, and the tool rests are adjustable to follow up wheel wear.

The unit is furnished for all single-phase A.C. voltages and cycles. The wheels have a diameter of 7 in., by 1-in. face, by 5/8-in. arbor hole. The net weight of the unit is 62 lb.

This Year's Shows Were Best Ever But—

(*Continued from page 311*)

around the turn-table follow the salesman's harangue until, just as he was about to clinch some sales point, a new, animated display would be brought into view by the turning platform and their attention would be completely distracted. So heads kept bobbing up and down, while the two non-coordinated sales stories knifed each in an attempt to win attention. It was not the fault of the sales talk, nor was it the fault of the displays, many of which were cleverly conceived. They were simply out of gear.

Chevrolet wisely limited the dramatization of their story to six salient features, separated widely enough so they would not clash. They knew that to retain a clear impression of even only six out of 21 selling arguments presented in rapid sequence, would tax the mind of a memory expert.

One of the best attention-getters of the General Motors group both at the Palace and at the auxiliary Waldorf-Astoria show—and one that packed a real sales punch—was the demonstration by two miniature cars in tandem operating on a moving belt. The two cars were identical save for the introduction in one of them of the much publicized "knee action." As the conventional car met the bumps on the moving belt, the rear seat pitched in an alarmingly familiar way, while the "knee action" car rode down every irregularity with serene indifference. A mechanical analogy with weights, and springs of uneven tension, stood close by to satisfy the "reason-why" queries of the mechanically minded. Here was an understandable story told in understandable layman's terms.

Why did this demonstration draw much bigger crowds in the Oldsmobile exhibit than did the identical demonstration elsewhere? Simply because Oldsmobile mounted it at a high enough level so that more than two rows of spectators could see plainly at one time; and put the lecturer on a level where he could be easily seen and heard by all the spectators.

With more care in the planning of their display space, Reo could have demonstrated their "self-shifting" to five or ten times as many prospective purchasers. For the public was eager to learn. Auburn, in its big corner, could have approached De Soto's success, by more effectively staging the two chasses (one of which was usually unmanned) and raising the demonstrator to where he could talk to more than a small circle of faces at a time. High-pressure sales talks that last for 35 or 40 min. without a break, call for a high degree of interest or naiveté on the part of prospective buyers. In the Rockefeller Center, the entertaining medium of the mysterious "Human Ford" was used to liven the sales talk and avoid monotony. "Chief Pontiac," the Indian in the Pontiac exhibit, who answered questions was as favorably received at the Auto Show as he had been at the World's Fair. A good show is dramatic unexpectedness. It must startle one's mind loose and arrest attention, before the sales message can be effective.

The palm for showmanship at the New York auto shows should go to Packard for their highly entertaining, educational and sales-building "Color and Fabric Salon" at the Roosevelt Hotel. Here was an exhibit skillfully geared to the idiom of their clientele. Here was evidence of careful thought regarding the sequence of presentation; the making of one sales point thoroughly, at a time; getting the public to take part; well-trained attendants with a story in laymen's language; excellent sales follow-through, and an entertainment climax unique in its field. In an hourly series of 30-min. lectures, Herbert T. Strong presented an exhibition of "The Realm of Color in Nature," astonishingly beautiful and impressive. Many returned time and again to see the exquisite color harmonies thrown on a screen through the use of polarized light projected through minute crystals of substances such as asparagus juice and trianol. Beautiful color harmony and Packard cars and leadership will long remain associated together in the minds of many thousands of potential customers.

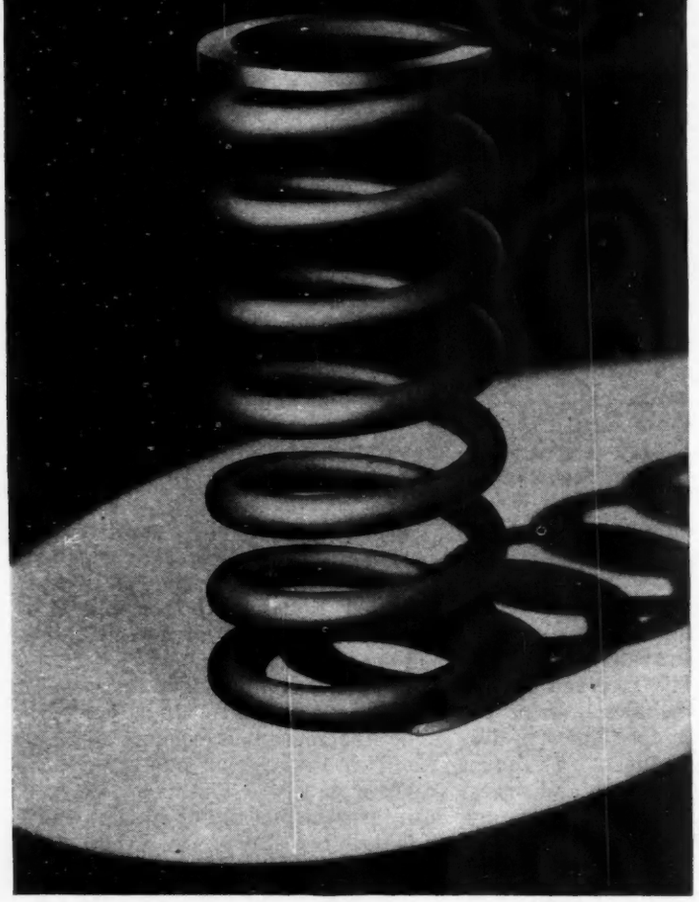
Showmanship does not mean added expenditure. It may actually be the means of economizing, not only in the cost per number of prospects gathered and the quality of interest aroused, but in the quantitative investment involved. Good showmanship is not labored or expensive. It is a subtle, elusive quality. Its appeal is universal. Showmanship is not necessarily reasonable or logical. Intrinsically, it may not be particularly relevant to the product. But an exhibit which has it will be seen and long remembered, while an exhibit which lacks showmanship will accomplish relatively little.

GE Refrigerated Truck Bodies

General Electric Company, which has had extensive experience in the manufacture of domestic refrigerators, has recently entered the manufacture of electrically refrigerated truck bodies. On the road, power for refrigeration is supplied by the truck engine, while at night in storage the power is obtained from 220-volt alternating current lines. The refrigerating machinery is located in the forward part of the body directly behind the cab and is accessible through a side door. The condensing unit has a capacity of 2000 B.t.u. per hour at a room temperature of 100 deg. F., and an evaporator temperature of zero Fahrenheit.

The electrically-refrigerated body is designed to be mounted on a 1½-ton chassis of about 157-in. wheelbase, and provides capacity for 315 gallons of ice cream and space for 33 empty 5-gal. cans. The weight of the complete body, including the refrigeration machinery, is 2700 lb.

More Proof.... *of the Superiority of* Silicon-Vanadium Steel *in Coil Springs*



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